Assessment and Treatment of Anger in Offenders with Developmental Disability

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DECLARATION

The candidate confirms that the work submitted is his own and that appropriate credit has been given where reference has been made to the work of others.

The research on which this thesis is based was conducted by a clinical team led by the candidate in a National Health Service setting. The candidate acted as the principal investigator and supervisor for this clinical research programme, as well as one of the four therapists for the treatment study.

The original suggestion for the research was made by Professor Raymond Novaco who became a consultant and advisor to the programme. The initial suggestion was developed by the candidate into a full proposal and protocol that guided the research programme. The material for the thesis is the work of the candidate with support and advice from Professor Novaco and my University of Edinburgh adviser, Professor William Lindsay.

The candidate confirms that this thesis has not been submitted in candidature for any other degree, diploma or professional qualification.

Date: ..... 6 September 2002

ABSTRACT

Aggression is the primary reason for people with developmental disabilities to be admitted or re-admitted to institutions. It is also the main reason for this client group to be prescribed anti-psychotic and behaviour control drugs. Anger is a significant predictor and activator of aggressive behaviour. There is some limited evidence for the value of cognitive-behavioural treatments for anger problems with people with developmental disabilities. However, no controlled studies of anger treatment involving developmentally disabled offenders living in secure settings have been conducted to date.

In an anger assessment study conducted within a specialist learning disability hospital, a detained in-patient group of 129 developmentally disabled men with offending histories were assessed on a range of anger and aggression measures in order to investigate the nature and scope of anger problems in this population. The reliability, concurrent and discriminant validity of several criterion measures of anger and aggression were investigated by examination of the intra- and inter-relationships of self and informant measures of anger, aggression and personality characteristics.

Results from this hospital-wide assessment study show that on multiple self-report and staff-rated measures, anger is an important clinical problem for this patient population, having significant links to patient background factors and assault behaviour in the hospital. It was demonstrated in this study that anger as a construct has validity and could be reliably assessed in a coherent manner among clients with intellectual impairments and forensic histories that might have confounded such assessment.

In a treatment study conducted in the same setting, 40 detained patients with developmental disabilities and histories of offending were allocated to specially modified cognitive-behavioural anger treatment (AT group) or to routine care waiting-list control (RC group) conditions. Eighteen sessions of individual treatment were delivered over a period of 12 weeks. The AT and RC groups were assessed simultaneously at four time points: screen, pre- and post-treatment, and at 4-months follow-up (all before the RC group entered treatment). The effectiveness of the treatment was evaluated by analysing between group differences in linear trend on a range of self- and staff-rated outcome measures using repeated measures mixed design analyses of co-variance (ANCOVA).

Compared to the RC condition, patients in the AT condition had significantly greater decreases in self-reported anger following intervention and at follow-up. This indication of therapeutic gain associated with the anger treatment also received some convergent support by staff ratings of patient behaviour post-treatment. It was also found that the anger treatment impacted positively on direct care-staffs' ability to cope with patients' anger problems.

It is concluded that people with developmental disabilities and offending histories can benefit from intensive individual cognitive-behavioural anger treatment that also appears to have beneficial 'systemic' effects. Further research is required to examine the mechanisms for change, their sustainability and generalisability across a range of settings.

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CHAPTER 1: INTRODUCTION

1.1 Terminology

In the United Kingdom the term 'learning disability' is commonly used to describe people characterised as having (a) significant sub-average general intellectual functioning as measured on standard individual intelligence test, (b) more difficulties in functioning in two or more specified areas of adaptive behaviour than would be expected taking into account age and cultural context, and (c) experienced the onset of this disability before the age of 18 years. These criteria are broadly those included in the International Classification of Diseases (ICD-10), Diagnostic Statistical Manual (DSM-IV) and American Association on Mental Deficiency (AAMD) diagnostic classification systems. The terms 'mental retardation' and 'intellectual disability' are commonly used in North America and Australia respectively to refer to the same syndrome.

There are a number of reasons for defining such conditions in this way. Cocks (1998) outlines some of the purposes for using such a definition. These include gate-keeping access to services and benefits, aiding diagnostic processes that enable clinicians to identify aspects of a particular condition such as its aetiology and course, and defining the response of societies and their institutions to a person's disability which can be more or less stigmatising or inclusive.

Another reason for attempting to define disability is to have descriptive terms that help communities of interest to communicate about phenomena in such ways that "conveys agreed-upon meaning" (Cocks, 1998, p. 39). For this reason the term 'developmental disability' is used throughout this thesis to describe the study population and other similar populations. It refers to the definition given in the

United States Developmental Disabilities Assistance and Bill of Rights Act (2000) and is a broad concept covering the equivalent terms of mental retardation, learning disability, and intellectual disability commonly used in North America, United Kingdom and Australia respectively. In general terms developmental disability means a severe, chronic disability of an individual that;

1. is attributable to a mental or physical impairment or combination of mental and physical impairments;
2. is manifested before the individual attains age 22;
3. is likely to continue indefinitely;
4. results in substantial functional limitations in three or more of the following areas of major life activity;
    i. self-care
    ii. receptive and expressive language
    iii. learning
    iv. mobility
    v. self-direction
    vi. capacity for independent living
    vii. economic self-sufficiency; and
5. reflects the individual's need for a combination and sequence of special, inter-disciplinary, or generic services, individualised supports, or other forms of assistance that are of life-long or extended duration and are individually planned and co-ordinated.

In addition to mental retardation, the concept includes other conditions that do not necessarily involve significant sub-average intellectual functioning such as autism, epilepsy, and some other neurological conditions. The definition of developmental disability also focuses on functional limitations and life-long support needs that need to be individually planned and co-ordinated. The assessed levels of intellectual functioning of the participant samples involved the research described in this thesis, and the inclusion of people with conditions other than learning disability, mean that the term developmental disability provides the best description of the population involved in these studies.

In describing research conducted by others in a range of settings across a number of continents, whenever possible and appropriate, and when it makes sense to do so, the terms used by authors in their reports to describe the participants and samples involved in their studies are used.

1.2 Development of the Anger Treatment Project

The Anger Treatment Project (ATP) was developed in the male forensic services of a specialist disability NHS Trust. The great majority of patients in this service have offending or quasi-offending histories. That is, they have been convicted of carrying out particular offences, or they have well documented (in clinical notes) histories of behaviours that for a variety of reasons have not been processed through the criminal justice system, but have placed the individual at risk of becoming a convicted offender.

The major offence categories for this population at Northgate Hospital are, in descending order of frequency, sex offences, violent offences and fire-setting

offences. Many patients have convictions or documented histories of behaviour in more than one of these categories. In addition to these offence types, a considerable number of patients have convictions for, or histories of property related offences including theft, burglary, criminal damage and car crime.

Given the forensic backgrounds of this population, the Trust's Psychology Services have been working over some considerable time to design, develop and implement offence-specific assessment and intervention programmes aimed at reducing the risk of future offending behaviour and thereby facilitating rehabilitation of patients from in-patient hospital services to community-based facilities. Based on the 'what works' meta-analysis literature concerning recidivism rates for offenders, sex offender and fire-setter treatment programmes have been developed and implemented with reference to number of key principles (McGuire, 1995; Skett, 1995). This has involved the development of treatment interventions that;

- are cognitive-behavioural in nature, multi-faceted in terms of the problem areas targeted and orientated towards skills development;
- are responsive to the learning needs, styles and preferences of both clients and therapists;
- focus on the criminogenic aspects of the clients presenting problems that are proximal, rather than distal to offending behaviour(s);
- take into account the level of risk presented by clients by increasing the therapeutic 'dosage' proportionately for those judged to be higher risk in terms of recidivism, and;
- attend to issues of programme integrity by reducing or eliminating

therapeutic drift, treatment gain reversal and non-compliance with regard to the delivery of programmes by therapists.

It has been estimated that, based on the evidence available for non-developmentally disabled (mainly adolescent) offenders, interventions incorporating these principles and delivered in community settings are likely to be more effective than those that do not, and could reduce recidivism rates by between 12% (McGuire, 1995) and 24% (Skett, 1995).

The issue of programme integrity is thought to be pivotal in delivering successful interventions. Hollin (1995) set out some guidelines to avoid threats to integrity. Suggested ways of ensuring integrity include (a) interventions based on sound theoretical frameworks that have empirical evidence to support them, (b) ensuring that therapists implementing the interventions are well trained in both theory and delivery aspects, (c) use of manuals and protocols to guide the delivery of interventions, (d) clinical and organisational support for therapists, including supervision and access to other resources, and (e) the involvement of independent assessors to evaluate the quality and outcomes of the interventions.

Having successfully developed programmes for sexual aggression and fire-setting problems with these principles and issues in mind, attention was turned to anger and aggression in this in-patient population. In addition to the criminogenic/forensic reasons for this, other factors played a part. As well as being closely associated with aggression, anger is known to be a feature of a range of psychological conditions including mood, impulse control, personality and post-traumatic stress disorders (Novaco, 1986) and has been linked with impaired cardiovascular function (Siegman, 1993) and poor general health (Diong & Bishop,

1999; Swaffer & Hollin, 2001). It was anticipated, therefore, that by helping patients with their anger problems, their general psychological and physical well being would be improved and they could be more amenable to, and have additional resources to cope with, the demands of offence-specific treatments.

Another reason for giving clinical attention to problems of anger dyscontrol was that many patients were willing to discuss temper control problems early in their rehabilitation, compared with, for example, sexual aggression. Therefore, by beginning with a problem that had salience for the patient and was relatively unthreatening, therapeutic relationships and trust could be built that would facilitate more offence-focused work at a later stage.

The ATP refers to a range of service development, therapeutic and staff training activities, in addition to the evaluative research, concerned with the anger problems experienced by patients in the service. In this context the ATP can be viewed as a logical extension of the range of forensic programmes provided by the service. The planning for the development of this project coincided with the NHS publication "A First Class Service: Quality in the new NHS" (Department of Health, 1998) which set out the governments quality agenda for the NHS. In particular it describes the importance of gathering evidence for the effectiveness of treatments in order to safeguard and raise standards of care. For this, as well other reasons linked to good practice, it was decided that this clinical service development should take place within a research and development framework. Hence an 'Anger Research Programme' was planned.

1.3 Purpose of the Anger Research Programme

As well as enabling the service to work on the development of an anger treatment that would meet quality standards as set out within the NHS clinical governance framework (Department of Health, 1999; Hall & Firth-Cozens, 2000), the establishment of an Anger Research Programme was linked to a number of other professional and programmatic issues.

There is a strong impetus for clinical psychologists working within the NHS to have a greater research emphasis and for their practice to be evidence based (Milne, 1999). Whether this should be achieved by adhering to the "scientist-practitioner" model (Barlow, Hayes & Nelson, 1984) of industrious individuals heroically pursuing idiosyncratic, if valuable, interests, or by moving to the model of "evidence-based practitice" (Roth & Fonagy, 1996, p. 47) whereby a range of targeted, but segmented research activity is carried out within a broader R&D support system is the subject of on-going debate (Dagnan, 1999). Whatever the outcome of this discussion within the profession and the NHS, it is clear that the evidence base regarding psychological assessment and treatment of emotional problems in people with developmental disability using psychological therapies is spartan (Arthur, 1999; Prout, Chard, Nowak-Drabik & Johnson 2000), and research on the efficacy of psychotherapy applied to this client group is lacking (Butz, Bowling & Bliss, 2000). Therefore, given the service imperative for the development of an effective anger treatment, there was an opportunity for a 'natural' experiment to be carried out to enable a robust piece of clinical research in the evidence-based practitioner mode. It was hoped that this would make a significant contribution to the

knowledge base concerning the nature and scope of anger problems and the effectiveness of a particular psychological treatment approach with this population.

To approach such an important set of clinical issues in this empirical way also has the advantage of being more equitable towards people with developmental disability. It seems that in the past, for a number of reasons including professional misgivings and mis-attributions, organisational and societal indifference, and a lack of evidence regarding effectiveness, those with developmental disability and emotional problems have been denied access to psychotherapeutic approaches that have been routinely available to those without disability. Butz *et al.* (2000) consider some of the reasons for this including the important issue of "diagnostic overshadowing" of mental health problems in people with developmental disability first described by Reiss, Levitan and Szysko (1982, p. 567). This refers to the phenomenon whereby individuals' emotional problems are attributed to their disability rather than to a separate or distinct difficulty resulting in many disorders going undiagnosed and untreated.

When on those occasions psychotherapeutic approaches have been made available to people with developmental disability and emotional problems, they have not been applied with reference to any rigorous empirically based research. The ineffectiveness of such approaches have tended to be attributed to the characteristics of the clients with disability (i.e. their disability), rather than to the limitations of treatment techniques (or the therapists delivering them) as is the case when they are ineffective with non-disabled people (Prout *et al.*, 2000).

Taking into account these factors and influences, the Anger Research Programme (ARP) aimed to achieve two main goals within the Trust's male forensic

services. Firstly to investigate the nature, scope and patient needs in relation to anger control problems. This was to be done through an 'anger assessment' study. Secondly, the effectiveness of a psychological anger treatment developed specifically for this population was to be evaluated using a controlled outcome study design - the 'anger treatment' study.

CHAPTER 2: ASSESSMENT AND EVALUATION OF ANGER AND AGGRESSION

2.1 Emotion and Anger in People with Developmental Disability

A number of commentators have observed how little is known concerning the emotional aspects of the lives of people with developmental disability (Arthur, 1999; Benson & Ivins, 1992; Frankish, 1989; Strongman, 1985). There are many reasons for this omission. They include a general lack of interest in, or regard for the internal worlds of people seen as different. Mental health systems may be concerned about the imperative to act if they were to better understand the emotional distress experienced by this socially excluded and marginalised group. Professionals sometimes have concerns about the effectiveness of interventions that might be used to alleviate psychological distress (Stenfert Kroese, 1998). On the other hand, Bender (1993) suggests a more likely explanation is that therapists are reluctant to offer individual therapy as this would require them to have intensive and intimate therapeutic relationships with people perceived as unattractive because of their disability. There is also a tendency to attribute any emotional difficulties presented by an individual to the disability rather than to emotional state or needs (Butz *et al.*, 2000; Hollins & Sinason, 2000). Another issue is a lack of well-developed instruments to help with the assessment and understanding of the emotional needs of people with developmental disability (Benson & Ivins, 1992; Prout *et al.*, 2000). Compounding these issues is the difficulty researchers routinely encounter in securing funding for studies investigating psychological problems and interventions involving people developmental disability.

There are many reasons for giving attention to anger as an emotional dyscontrol problem in this population. The relationship between anger and aggression has been well articulated (Novaco, 1986, 1994). Within his conceptual framework describing the determinants and consequences of anger, Novaco (1994) asserts that anger is a subjective emotional state involving physiological arousal and cognitions of hostility, and is a causal determinant of aggressive behaviour. Whilst anger is a significant activator of aggression, it is "neither necessary or sufficient" for it to occur (Novaco, 1994, p. 33). However, it is also the case that aggressive behaviour can induct feelings of anger as well as dissipate them in a cathartic manner. Thus, anger and aggression can be thought of as having "bi-directional causality" (Novaco, 1994, p. 33) so that levels of each can be influenced by the other (Konecni, 1975). In addition to being an important determinant of aggressive behaviour, anger is a common feature of personal distress, and it presents significant challenges for those providing clinical and other human services. Novaco (1986) sets out clearly the association between anger and a range of mental health disturbances which can feature aggression as part of their clinical profiles including personality disorders, conduct disorder in children and adolescents, organic mental disorders, affective disorders, post-traumatic stress disorder, dissociative disorders such as amnesia and fugue, and explosive disorder. It would seem that although anger can be an adaptive human emotion that facilitates functioning in a number of spheres, it is also associated with many clinical disorders and dysfunctional syndromes in ways that are not helpful to affected individuals, those around them or society at large. As well as the relationships between anger and psychological well being, Swaffer and Hollin (2001)

found that in a detained population of young offenders high levels of self-reported anger were significantly associated with indicators of poorer general health.

2.2 Prevalence of Aggression Problems Amongst People with Developmental Disability

Various surveys of populations of people with developmental disability have found high rates of what has been termed 'challenging behaviour,' in which aggression features prominently (Harris, 1993; Hill & Bruininks, 1984; Sigafoos, Elkins, Kerr & Attwood, 1994; Smith, Branford, Collacot, Cooper & McGrother, 1996). Harris (1993) conducted a survey of service providers concerning 1,362 people with developmental difficulties in the Southwest Region of England. The overall prevalence of aggression was found to be 17.6%. Other forms of challenging behaviour were reported (e.g., social withdrawal, stereotypic movements, absconding), but verbal abuse and physical aggression were the behaviours most frequently noted. Harris' study included both hospitals and community day care facilities. The prevalence rate for aggressive behaviour in the hospitals (38.2%) was almost four times greater than that found in the community day facilities (9.7%). In a similarly conducted survey regarding a population of people with intellectual disability in Queensland, Australia, Sigafoos *et al.* (1994) found that 11% of the total population of 2,412 people were identified by service providers as exhibiting aggressive behaviour, and there was considerable variation as a function of residential setting. The prevalence of aggressive behaviour was 35% for those in institutions, 17% in community-based group homes, and 3% in other community accommodations.

Results consistent with these service provider surveys were obtained by Smith *et al.* (1996) in a study involving home interviews with key persons providing care for 2,277 adults with developmental disability in Leicestershire, England. They found that across the entire sample 23% of males and 19% of females were reported as being physically aggressive, and the prevalence of aggression (40%) for residents of National Health Service (NHS) institutional settings was greater than that for those residing in the community. In a similar study by Hill and Bruininks (1984), interviews regarding maladaptive behaviour were conducted with direct care staff working with residents with mental retardation. The study involved a representative sample of 236 community and public residential facilities across the U.S. From the data presented Hill and Bruininks' paper (p. 383), it is calculated that, for the 2,491 residents included in this study, the overall prevalence of behaviour causing injury to others, across all age ranges, was 26.6%. The rate for this behaviour among residents, new admissions, and re-admissions in public facilities averaged 36.9%. For those people residing in community facilities, the prevalence of the same category of behaviour was 16.3%.

Outside of specialised research projects, anger is rarely an assessment priority. It is noteworthy, therefore, that Lindsay and Law (1999) reported that, following assessment, more than 60% of the developmentally disabled clients referred to a Scottish community-based service for challenging or offending behaviours had clinically significant anger problems. In a similar vein, Benson (1985) reported that 30% of the people with mental retardation reporting to a mental health clinic in the US were referred for self-control problems.

The epidemiological research on aggression by Harris (1993), Hill and Bruininks (1984), Sigafoos *et al.* (1994), and Smith *et al.* (1996) demonstrates that levels of aggression, and by implication anger, are particularly high for people with developmental disability living in institutional and hospital settings. It is likely that many people with developmental disability are institutionalised because of their aggressive behaviour. Lakin, Hill, Hauber, Bruininks and Heal (1983) found that the primary reason for people with developmental disability to be admitted or re-admitted to institutional settings was aggression. It was also the main reason for individuals in this client group to be prescribed antipsychotic and behavioural control drugs (Aman, Richmond, Stewart, Bell & Kissell, 1987). However, many aspects of institutional living provoke feelings of frustration, helplessness, injustice, and anger. They include: little, if any, personal choice; restricted opportunities for the development of mutually supportive or intimate relationships; limited occupational or work-related activities; cramped living conditions and little privacy; over-heated buildings of poor architectural design; and staff who might be inadequately trained, insufficiently supported, or unmotivated (Black, Cullen & Novaco, 1997; Levey & Howells, 1991). Institutional residents, therefore, often have to endure environments that are constraining, de-personalised, artificial, alien in character, and stressful.

2.3 Systemic Effects of Aggression Problems in People with Developmental Disability

Anger has been shown to be predictive of physical aggression in psychiatric hospital inpatients (Novaco, 1994; Novaco & Renwick, 2002). This is at great cost to the staff working in these settings. In a survey of violence experienced by staff in the

National Health Service (NHS) in England and Wales 10% of respondents reported receiving a minor injury in the previous 12 months and one in six had been threatened verbally (Health and Safety Commission, 1987). High levels of direct care staff injuries have been reported in a number of studies done in secure hospitals (Carmel & Hunter, 1989; Bensley, Nelson, Kaufman, Silverstein, Kalat & Shields 1997). The Carmel and Hunter study concerned one of California's primary forensic hospitals, where in one year, 16% of the ward nursing staff sustained serious injuries as a result of patient violence. The Bensley *et al.* study, involving psychiatric hospital employees in the state of Washington, found that there were 13.8 workers compensation claims due to assault per 100 employees in a one-year period.

There have been comparable findings concerning people with developmental disability living in institutional contexts. In their study of violence faced by staff in a developmental disability service of an NHS Trust in the UK, Kiely and Pankhurst (1998) found that this service recorded nearly five times more incidents of patient-inflicted injury than the Trust's sister psychiatric service. Eighty-one per cent of respondents in the developmental disability service reported suffering physical assault at the hands of service-users during the previous 12 months.

Bromley and Emerson (1995) found that the emotional responses of developmental disability staff to episodes of service-user aggression included annoyance (41%), anger (24%), and fear (19%). Staff reported the most significant sources of stress were associated with challenging behaviour that was perceived to be chronically wearing, unpredictable, difficult to deal with and understand. These phenomena are consistent with the process of staff 'burnout' and have clear implications for quality of care provided to patients. Staff in the Kiely and Pankhurst

(1998) study reported a range of reactions following a violent incident including ignoring the perpetrator, increased wariness and caution in their contact with the assailant, and loss of confidence in their ability to work competently. Jenkins, Rose and Lovell (1997) found that staff working with developmentally disabled clients with challenging behaviour (including aggression) were significantly more anxious than staff working with non-challenging clients.

In their review of staff behaviour associated with challenging behaviour Hastings and Remington (1994) concluded that there is clear evidence that staff respond to challenging behaviours using strategies that will develop or maintain at least some of the behaviour causing concern. High turnover rates and burnout have been found to be a consequence of exposure to the risk of violence amongst staff working in developmental disability services (Attwood & Joachim, 1994). In these ways, anger and aggression can be seen to carry heavy costs for the whole system concerned with providing security and rehabilitation for developmentally disabled offenders.

2.4 Assessment of Aggression and Anger in People with Developmental Disability

Effective clinical interventions are based on sound formulation of anger problems. Both formulation and evaluation of treatment outcome require robust assessment methods. A range of difficulties has been noted with the assessment of emotions in people with developmental disability and with assessment of anger in particular (Benson & Ivins, 1992; Lindsay, Overend, Allan, Williams & Black, 1998; Rose & West, 1999). The reliability of self-reports of emotions by people with

developmental disability, including anger, can be affected by factors such as cognitive aptitude, verbal comprehension, communication and social interaction skills. These problems can lead to methodological difficulties with these measures including acquiescence and other social desirability effects, response sets, and primacy and recency effects. However, it has been shown that by either developing new instruments specifically for them, or by adapting measures developed for non-disabled populations, people with developmental disability can identify their own emotions reliably and consistently (Lindsay *et al.*, 1994; Stenfert Kroese, Dagnan & Loumidis, 1997).

Little work has been carried out to investigate to what extent assessments of anger obtained from people with developmental disability have reliability and validity. Table 1 lists the few studies that have addressed this issue directly. Benson and Ivins (1992) found that direct carers (mostly residential care staff) rated people with mental retardation as angrier than the individuals did themselves. There could be a number of reasons for this including the people with disability responding in a socially desirable direction in order to present themselves more positively. Indeed, Benson and Ivins interpreted this result as reflecting "a bias on the part of the subjects to deny anger or a lack of awareness of angry feelings" (p. 173). Alternatively, informants may have overestimated how angry people were as these difficulties could have resulted in anxiety and fear which affected their judgement.

However, in a more recent study Rose and West (1999), using the same self-report 35-item Anger Inventory as did Benson and Ivins (1992), found a significant association between self-reported anger scores and staff records of incidents of

Table 1
Studies Investigating the Assessment of Anger and Aggression in People with Developmental Disability

Study	Description	Findings
Benson & Ivins (1992)	Informant and self-report measures of anger derived from a scale designed for non-disabled children were administered to 130 adults with learning disability living in the community.	Concurrent validity for a 35-item self-reported anger questionnaire could not be demonstrated; informants rated subjects as "angrier" than the people rated themselves; subjects in the severe/moderate range of intellectual functioning reported significantly lower anger levels than those in the mild range.
Walker & Cheseldine (1997)	A self-report inventory made up of items concerned with clients' responses to potentially provocative situations was used to evaluate the outcome for 4 clients involved in an anger management and assertiveness group therapy training programme.	The percentage inter-rater agreement regarding clients' responses on the self-rated provocation inventory was 82% which was considered to provide evidence of satisfactory inter-rater reliability for this measure.
Rose & West (1999)	Records of aggressive behaviour were kept by significant others during a period that 5 people with learning disability were asked to complete a self-report anger inventory on a number of different occasions.	Some evidence was provided for an association between self-rated levels of anger and the number of aggressive incidents recorded on a monthly basis by care staff.

challenging behaviour for five men with developmental disability living in community settings.

In order to evaluate outcomes for clients involved in an anger management and assertiveness training group, Walker and Cheseldine (1997) used a version of the Novaco Provocation Inventory (Novaco, 1988) modified for use with people with developmental disability by Black and Novaco (1993). They adapted this Provocation Inventory further for use in a community rather than an institutional setting. Clients' verbal responses to the provoking scenarios described to them were rated according to the behavioural reactions reported, e.g. verbal aggression, physical aggression, damage to property. Inter-rater reliability agreement reached 82% for the coding of clients' responses on the Provocation Inventory into the seven categories used.

2.5 Conclusions

Despite the huge impact that anger and aggression problems have on human services working with people with learning disability, particularly in in-patient settings, little work has been completed to date on the development of reliable and valid assessment tools for the diagnosis, description and formulation of anger and aggression problems in this population. These are essential for robust evaluation of treatments for anger and aggression problems with this client group. The work of Benson and Ivins (1992), Rose and West (1999) and Walker and Cheseldine (1997) provides some limited evidence that reliable and valid assessments of anger reactivity can be achieved with people with developmental disability. Clearly more work is required to evaluate the utility of these measures and develop them for work

with people with developmental disability and anger/aggression problems living in a range of environments. To date there has been no empirical study examining anger assessment issues with a hospital in-patient population with developmental disability and forensic histories. A study that evaluated the reliability and validity of anger assessment procedures and investigated the relationship between anger and aggressive behaviour with such patients would be a useful addition to evidence base. It would also help to shape the development of effective treatment interventions for anger problems with this population.

CHAPTER 3: TREATMENTS FOR ANGER AND AGGRESSION

3.1 Treatment Approaches to Aggression in Developmental Disability

Methods used to deal with aggressive behaviour in people with developmental disability fall into four broad categories that require different levels of intervention. They are:

- Level 1 – Reactive Strategies

  Those that are aimed at managing rather than reducing challenging behaviour when it occurs with reference to clear guidelines (e.g. control and restraint, seclusion, emergency (PRN) medication).

- Level 2 – Ecological Interventions

  Those that alter the environment or routine in order to either change the contingencies supporting the behaviour, or to control the antecedents to it (e.g. increasing the amount of personal space available, reducing noise levels).

- Level 3 – Contingency Management

  Procedures based on learning theory that aim to establish new behaviours that will displace or replace challenging behaviour through the introduction of new contingencies of reinforcement and/ or punishment (e.g. extinction, differential reinforcement of incompatible behaviour, non-contingent reinforcement, time-out).

- Level 4 – Positive Programming

  Procedures, including direct treatment interventions, that aim to teach the client new skills, abilities and strategies to cope with their environment without the need to rely on challenging behaviour (e.g. skills training, relaxation training, psycho-educational approaches).

There is a substantial literature on the efficacy of treatment interventions for aggressive behaviour in people with developmental disability that utilise behavioural approaches and a more limited literature relating to the use of medication. Table 2 lists a number of papers providing substantial reviews of the treatment of aggression and anger problems in people with developmental disability.

3.2 Psychopharmacological Treatments

Matson *et al.* (2000) reviewed the use of psychopharmacology with people with various behavioural and psychological difficulties and developmental disability. They reported that despite the very large numbers of people with developmental disability prescribed medication for aggression, very little research has been reported in this area over the last ten years. They found only 14 studies that *partially* met the methodological criteria for inclusion in their review. Whilst most of these studies reported significant reductions in aggression following treatment, all contained serious methodological flaws. The authors suggest that for the 12 studies that utilised antipsychotics, it is likely that their effects are a consequence of indiscriminate suppression of aggressive and other adaptive behaviour that results in serious side-effects. Matson *et al.* (2000) concluded from their review that there is no sound evidence that medications are effective in treating aggression in people with developmental disability.

Baumeister, Sevin and King (1998) provided a brief review of the use of neuroleptic medications for problem behaviour, including aggression, in people with mental retardation. They listed 13 studies investigating the effects of neuroleptics on aggression published between 1957 and 1995.

Table 2

Reviews of Treatment of Aggression and Anger Problems in People with Developmental Disability

Study	*Grade	Description	Findings
Lennox *et al.* (1988)	1	Reports on 'decelerative' treatments for behaviour problems published in 7 major developmental disability journals between 1981and 1985 were reviewed; 162 studies were reviewed involving 548 child and adult subjects with all levels of disability in a wide range of settings; data for 56 subjects with aggression problems across all studies were analysed according to three levels of treatment procedure intrusiveness.	More intrusive interventions, including time-out, aversion techniques and medication, were more likely to be used for aggression problems than for other types of behaviour problems; less intrusive interventions such as self-management were more effective than intrusive techniques; compared with other types of interventions medication was particularly ineffective in dealing with problems of aggression.
Scotti *et al.* (1991)	1	Meta-analysis of interventions for problem behaviour published between 1976 and 1987 in 18 major journals in the developmental disability field; 403 studies from 318 articles were included in analyses of treatment effectiveness taking into account type of behaviour problem, severity of the behaviour and degree of intrusiveness of the intervention.	Physical aggression/tantrum behaviours were associated with the lowest overall treatment effects when compared with other classes of behaviour problems; limited evidence is provided for the superiority of less intrusive and constructive interventions such as environmental change and positive practice, over more intrusive techniques, including aversive stimulation, in reducing aggressive behaviour; in general the effectiveness of interventions for problem behaviours is correlated with active programming, generalisation, integrated setting and longer follow-up variables.
Whitaker (1993)	1-	Narrative review of psychological methods for reducing aggression; 78 studies categorised into ecological intervention, positive programming and contingency management procedures are included; people with a range disability levels, from mild to profound, were involved; the studies included children and adults living in staffed and unstaffed settings.	Psychological treatment methods found to be effective were behavioural in nature and concerned mainly with contingency management; little evidence was found for the effectiveness of self-control procedures, particularly with subjects with greater levels of intellectual disability; ecological interventions showed some promise, but difficulties in completing thorough functional analyses may limit the application of these approaches in naturalistic settings; there are great difficulties in successfully implementing behavioural interventions with low frequency aggression and in unstaffed settings.
Baumeister *et al.* (1998)	1-	Narrative review of the efficacy of neuroleptic medication for schizophrenia and aberrant behaviours including aggression; 13 studies on the effects of these drugs on aggression problems published between 1957 and 1995; these studies involved approx. 867 subjects with all levels of mental retardation.	All but three of the 13 studies included were considered to be methodologically unsound; as a result firm conclusions concerning the effects of these medicines on aggressive behaviour; the evidence for the efficacy of this form of therapy in reducing aberrant behaviour, including aggression, was considered to be weak; individuals' responses to these drugs are highly variable and unpredictable; any effects could be the result of non-specific suppression of behaviour and cognition generally.

*Grade1 = Systematic review including at least 1Randomised Controlled Trial (RCT) and an attempt to statistically analyse the results of studies included; Grade 1- = systematic review including at least 1 RCT but no attempt to statistically analyse the results of studies included.

Table 2 *continued*

Study	*Grade	Description	Findings
Matson *et al.* (2000)	1-	Narrative review of the use of psychoactive medications for a range of behaviour and psychiatric problems; 72 studies were included in the analysis including 14 that specifically targeted aggression problems; these studies involved a total of 169 child and adult subjects exhibiting all levels of learning disability.	All of the studies aimed at controlling aggression contained serious methodological flaws; twelve of the 14 studies reviewed utilised atypical antipsychotics and their effects are likely to be a consequence of indiscriminate suppression of aggressive and collateral behaviours; the 2 studies that that evaluated the efficacy of SSRIs were poorly designed and produced confounding results; there is no sound evidence that medications are effective in treating aggression in these client groups.
Brylewski & Duggan (1999)	1	Cochrane review of RCTs of the effectiveness of antipsychotic medication for challenging behaviour (in the absence of psychiatric disorder) in people with learning disability.	Only three RCTs met the inclusion criteria and were included in the analyses; the analyses provided no evidence for the effectiveness of antipsychotics in reducing challenging behaviour in adults with learning disability.
Carr *et al.* (2000)	1-	Narrative review of non-contingent reinforcement (NCR) as a treatment for 'aberrant' behaviour in children and adults with learning disability; 33 studies included, the great majority of which were published during the 1990s; 15 of these studies included aggression as a target behaviour involving mainly people with moderate-severe levels of disability.	NCR found to be a promising approach for the treatment of aberrant behaviour, including aggression; has not been evaluated outside of experimental settings; hence issues concerning transferability and generalisation of treatment effects are unresolved and the application of this technology in naturalistic settings is in doubt.
Whitaker (2001)	1-	Narrative review of broadly cognitive-behavioural approaches to anger control for people with learning disability; 16 studies published between 1978 and 2000 are included; a total of 88 subjects with mild to moderate levels of disability were involved in these studies; only two of the 16 studies are group comparisons with the rest being case studies or series.	The review indicates that there is limited evidence that cognitive-behavioural anger control packages can be helpful, however, the majority of the studies included produced unclear results and often had poor experimental designs; the non-cognitive components of these packages, including relaxation and self-monitoring, appear to most effective in increasing anger control; effective use of cognitive techniques with this client group may be hampered by cognitive and language limitations associated with subjects' learning disabilities.

*Grade1 = Systematic review including at least 1Randomised Controlled Trial (RCT) and an attempt to statistically analyse the results of studies included; Grade 1- = systematic review including at least 1 RCT but no attempt to statistically analyse the results of studies included.

They reported that it was difficult to draw any conclusions from this literature because much of the literature is flawed methodologically. They considered the study method to be sound if it utilised either an experimental design in which the subjects were randomly assigned to concurrently run drug or placebo groups or quasi-experimental within-subject designs in which at least one reversal of the drug effect was demonstrated. Only three of the studies met either criterion. Overall Baumeister *et al.* (1995) concluded that the evidence for the efficacy of neuroleptic medication in reducing aberrant behaviour including aggression is weak. The effects of these medicines on individuals with mental retardation are highly variable and unpredictable. They lack specificity with regard to target behaviours and are likely to exert non-specific effects by suppressing behaviour or cognition generally.

In their review of antipsychotic medication for challenging behaviour in people with developmental disability, Brylewski and Duggan (1999) found only three randomised-controlled trials that could be included in their analyses. These provided no evidence of whether this treatment helps or harms adults with developmental disability and challenging behaviour.

3.3 Behavioural Treatments

Lennox, Miltenberger, Spengler and Erfanian (1988) reviewed 162 studies of 'decelerative' interventions for behaviour problems in people with developmental disability published in seven journals between 1981 and 1985. They found that for subjects with aggression problems (total $N = 56$ across studies reviewed) more intrusive interventions such as time-out, aversion techniques and medication were more likely to be used than for other classes of behaviour problems. In terms of

treatment effectiveness, less intrusive and more constructive treatment approaches to aggression such as environmental change and contingency management performed slightly better than more intrusive and restrictive techniques. The effectiveness of medication was particularly poor for this class of behaviour in comparison to other interventions.

The Lennox *et al.* (1988) review was relatively limited in terms of its range and its tolerance of methodological flaws in the studies included. Scotti, Evans, Meyer and Walker (1991) sought to improve on this by carrying out a meta-analysis of interventions for problem behaviour in people with developmental disability. They included 403 studies reported in 18 major journals between 1976 and 1987. They analysed treatment effectiveness in relation to type of behaviour problem *x* severity of the behaviour *x* intrusiveness of the intervention. Compared with other classes of behaviour problems, physical aggression/tantrum behaviours were associated with the lowest treatment effect. Overall less intrusive interventions, including environmental change and positive practice, were most effective compared to the most intrusive techniques such as aversive stimulation and restraint.

In a more recent review of non-contingent reinforcement (NCR) as a treatment for 'aberrant' behaviour in people with developmental disability, Carr *et al.* (2000) considered 15 studies with aggression as the target behaviour. The great majority of these studies involved people with moderate-severe levels of developmental disability. NCR involves the delivery of the reinforcer for a specific challenging behaviour to the individual on a response-independent basis in order to reduce or extinguish the target behaviour. This approach is thought to be beneficial as it is functional, relatively effective in reducing the frequency of target behaviour, delivers

a higher rate of reinforcement than other procedures and it is relatively easy to implement. Carr *et al.* (2000) conclude from their review that whilst NCR is a promising approach for the treatment of problem behaviour, including aggression, it has not yet been evaluated outside of extremely controlled experimental settings. Transferability and generalisation effects have yet to be explored and the schedule thinning in the studies reported thus far would not be practical in naturalistic settings.

Whitaker (1993) reviewed psychological methods for reducing aggression in people with developmental disability. He found very little evidence for the effectiveness of self-control procedures including self-monitoring, contingency control and self-instruction. This was the case particularly with people with greater levels of disability and associated cognitive and language deficits. Whilst he found some limited evidence for the usefulness of ecological interventions in reducing aggression in subjects with severe and profound levels of developmental disability, the number of studies reporting this approach was small. This was perhaps related to the difficulties involved in doing functional analyses which are necessary for effective ecological interventions. The bulk of the literature incorporated into Whitaker's (1993) review is concerned with contingency management using behavioural methods. The findings indicate that for these approaches to be effective in reducing aggression they need to be delivered consistently and they require high staff ratios. Further, there are great problems in successfully implementing these approaches with low-frequency aggression and in settings without paid-staff support. Whitaker (1993) concludes that the most effective psychological approaches to the reduction of aggression in people with developmental disability are behavioural in nature, involving antecedent control, skills training, or contingency management.

3.4 Cognitive-behavioural Treatments

Many of the studies involving cognitive-behavioural approaches to anger problems are based on the treatment approach developed by Novaco (1975) which utilises a stress inoculation paradigm (Meichenbaum, 1985). The core components of this treatment are (a) cognitive re-structuring, (b) arousal reduction and (c) behavioural skills training. There are numerous studies indicating this approach, or variants of it, to be effective with a range of forensic and clinical groups, including adult and adolescent in-patients and out-patients, as well non-clinical samples, particularly student volunteers.

Tafrate (1995) conducted a review of the effectiveness of treatment strategies for anger disorders in adults. This involved 17 studies published between 1974 and 1994 all of which involved comparisons of various forms of anger treatment against control conditions. Only two of the 17 studies involved clinical or forensic patients as participants, the remainder being made up of samples of university undergraduates. The majority of the treatment studies (12 out of 17) used a group therapy format rather than individual treatment sessions. The results of this meta-analysis were that for the five cognitive treatments included, the average treatment effect size was .93 which is considered large in terms of the guidelines given by Cohen (1992). Of the five cognitive treatments considered in this part of Tafrate's review, four were based on a self-instructional training model and one treatment study was based on the cognitive treatment approach of Beck (1976). In another section of the review nine 'multicomponent' treatments were analysed for their effect sizes. These treatments were characterised by the combination of several intervention

techniques such as relaxation, self-instructional training and application training. The average treatment effect size for these combined interventions was calculated to be 1.00.

Tafrate's 1995 review suggests that cognitive and combined cognitive-behavioural treatments for anger problems are as effective as relaxation therapies and skills based treatments. However, as the author notes, the analysis includes only a small number of studies, the great majority of which involved volunteer students as subjects. Also, over half of all the studies included involved the same researcher. It is likely that the nature and scope of the anger problems experienced by forensic and clinical populations will be very different to those reported by the samples included the majority of these studies. Therefore, the conclusions of this review should be treated with caution.

Edmondson and Conger (1996) attempted to improve on the Tafrate (1995) review of treatments for adults with anger problems by including studies that used behavioural measures to evaluate outcome and by taking into account the type of control group employed, and the use of follow-up studies. They identified 18 studies that met their inclusion criteria published between 1970 and 1994. Each study compared groups of 'generally angry' non-clinical adult subjects in different treatment conditions, one of which was a control condition. They purposely excluded studies that involved people under the age of 18 years, people with developmental disability, and spouse or child abusers as participants.

In order to compare the effectiveness of different anger treatments, Edmondson and Conger (1996) averaged effect sizes for different types of treatments. The treatments included were a) relaxation, b) cognitive, c) cognitive-relaxation and d)

social skills. Five studies were dropped from this analysis due to difficulties in computing effect sizes on some of the outcome measures reported in them. A further three studies were excluded as effect sizes could be calculated only for those variables that produced significant effects. It was thought that including these would bias the effect size analysis in favour of positive effects. Therefore, for this comparative effect size analysis only ten of the 18 studies identified in this review were used and these produced a total of 17 treatment groups. Overall cognitive and cognitive-relaxation treatments produced medium–large effect sizes whilst relaxation and social skills treatments had large effect sizes. Only one study in this review assessed the effectiveness of a multicomponent or comprehensive treatment and this produced medium-large effect sizes for self-report measures of anger disposition and coping behaviour. The authors concluded that it is difficult to recommend one treatment approach over any other based on this analysis as different treatments produced large effect sizes for some aspects of anger and small effects for others. Therefore it could be that different treatments are best applied for different kinds of anger problems experienced by different types of people. As Edmondson and Conger point out, these recommendations are tentative as this comparative analysis is based on small numbers of treatment groups. These groups generally had fewer than 20 subjects in them making it difficult to detect significant between group differences due to inadequate statistical power.

In addition to these statistical issues, Edmondson and Congers' (1996) review has a number of limitations. As in the Tafrate's 1995 review, studies involving clinical, forensic and quasi-offender populations (such as spouse abusers) were intentionally eliminated. None of the studies included in the comparative effect size

analysis involved self-referring clients with the kinds of serious anger problems that would be seen routinely by psychiatric and forensic services. Seven out of the ten studies included in the analysis involved the same researcher who used 'convenience' populations such as nurses or college students. Finally, all but one of the studies included used group therapy formats so there was no attempt to compare these therapies with those delivered to individuals.

In their survey of the literature on anger problems, Beck and Fernandez (1998) found that the great majority of anger treatment outcome studies had involved cognitive-behavioural approaches. In order to carry out a meta-analytic review that was more representative of research available on the cognitive-behavioural treatment of anger, Beck and Fernandez used broader inclusion criteria than those utilised by Tafrate (1995) and Edmondson and Conger (1996). They included published and unpublished (mainly doctoral dissertation) studies conducted between 1970 and 1995. Diverse samples of adults and children were included, many of which demonstrated severe anger problems associated with criminal behaviour, child and spouse abuse, delinquency and classroom aggression.

The final sample in Beck and Fernandez' (1998) review comprised 50 studies incorporating 1,640 subjects. Eight offender, five abusive parents/spouses and 12 juvenile delinquent/clinical adolescent samples, along with one adult clinical and one adult mental retardation sample were included in the review. The remaining 23 studies involved other samples such as school children, college students and 'volunteers'. Only studies incorporating combination cognitive-behavioural treatments were included. Studies using purely cognitive, or behavioural or relaxation techniques were excluded. Forty of the review studies used control groups

and 10 utilised single group, repeated measures designs. The 50 effect sizes obtained from the studies were weighted by sample size to take into account variations in the statistical power across studies. Beck and Fernandez found that the mean weighted effect size was .70, with the majority of study effect sizes being between .50 and .99. This is consistent with the outcomes of reviews of the effectiveness of cognitive-behavioural treatments for other affective disorders including depression and anxiety. They calculated that the average subject in a cognitive-behavioural treatment condition did better than 76% of those not receiving this type of treatment and this effect was significantly different than would be expected by chance. The authors concluded that cognitive-behavioural treatments have general utility in the clinical management of anger in a range of clinical, forensic and delinquent populations. While the medium-large mean weighted effect size was slightly smaller than that reported for multicomponent cognitive-behavioural treatments by Tafrate (1995), the latter was based on only a small number of studies, did not weight effect sizes depending on statistical power, didn't incorporate unpublished studies and included just two clinical samples.

Whilst the Beck and Fernandez (1998) review indicated that cognitive-behavioural anger treatments are effective when applied to offender and quasi-offender groups, there have been few well-designed studies of anger treatments for seriously disordered adult clinical populations. Stermac (1986) conducted a study with 40 in-patients remanded by the courts to a Canadian forensic facility for psychiatric assessment. The majority of study participants had a diagnosis of personality disorder and more than half had a previous psychiatric history. Subjects were randomly assigned to a psycho-educational group control condition or to an

anger treatment condition in which they received six sessions of brief group therapy based on cognitive-behavioural and stress inoculation principles. Those in the anger treatment group showed significant therapeutic gains on measures of anger disposition, use of cognitive re-structuring techniques, and use of strategies to reduce self-denigration, compared with control group subjects who received an eight session psycho-educational group intervention.

A study by Chemtob, Novaco, Hamada and Gross (1997) concerned very angry Vietnam War veterans suffering from severe post-traumatic stress disorder. Patients were randomly assigned to either cognitive-behavioural anger treatment or to routine clinical care conditions. Significant treatment effects were obtained in anger reaction and anger control in the anger treatment compared to routine clinical care, and these effects were maintained on 18-month follow-up.

The reviews described above by Beck and Fernandez (1998), Edmondson and Conger (1996) and Tafrate (1995) point to the effectiveness of cognitively based anger treatments as evidenced through controlled treatment trials and systematic group studies. However, these meta-analyses omit many published case and case series studies of cognitive-behavioural anger treatment. Brief reviews of the clinical treatment studies on anger with offender populations can be found in Novaco (1997) and Novaco, Ramm and Black (2000). These describe studies, in addition to that by Stermac (1986), involving offender populations that closely followed the cognitive-behavioural treatment developed by Novaco (1975, 1993). Bornstein, Weisser and Balleweg (1985) applied the stress inoculation paradigm with three forensic inpatients. Using a multiple baseline design they demonstrated significant anger

treatment gains on measures of staff-rated behaviour, self-reported anger and evaluations of videotaped role-plays.

Howells (1989) used a similar approach in a case study with a patient with an extensive history of violent offending that had led to numerous prison sentences and psychiatric admissions. A group therapy intervention that focused on cognitive re-framing, arousal reduction through deep muscle relaxation and behavioural skills training, incorporating video feedback, was helpful in reducing his violent behaviour. More recently Renwick, Black, Ramm and Novaco (1997) delivered a modified and extended version of Novaco's (1993) anger treatment protocol to four mentally disordered offender patients in a maximum security hospital in Scotland. The participants in this study were all men with histories of psychiatric illness including schizophrenia, personality disorder and alcohol/substance abuse. Three of the patients also had histories of severe self-injury or suicide attempts, whilst all of them were chronically assualtive towards others, most particularly nursing staff. Following treatment all four participants were judged by the therapists to have made significant clinical progress in treatment. This was most evident in improved levels of motivation and engagement, reduced sensitivity to perceived criticism and threat and increased ability to be reflective and think more flexibly about the actions of others. Care staff, including psychiatrists, nurse key-workers and day service staff rated all patients involved in the study to have become more tolerant of frustration, less tense and defensive. The treatment gains made by participants in this study led to one patient being transferred into the community and another two being recommended for transfer to less secure facilities.

In addition to these studies involving adult offender samples that utilised treatments based on Novaco's anger treatment approach, Novaco, Ramm and Black (2000) also describe a number of studies using this approach successfully with adolescent offenders. For example, Schlichter and Horan (1981) treated institutionalised aggressive adolescents using the stress inoculation approach. The treatment group showed significant treatment effects compared with a no treatment group. There have been numerous other studies using less sophisticated versions of this treatment approach, often psycho-educational in nature, that have reported positive outcomes for example with young offenders (McDougall, Boddis, Dawson & Hayes, 1990), male medium security prisoners (Smith & Beckner, 1993), and women in a medium security prison (Smith, Smith & Beckner, 1994).

3.5 Cognitive-behavioural Treatments for People with Developmental Disability

In a recent review of cognitively based anger control treatments for people with developmental disability, Whitaker (2001) concludes that the experimental evidence for such approaches in effectively reducing aggression with this client group is weak compared with the evidence for behavioural interventions that involve mainly antecedent control and contingency management. Unfortunately behavioural approaches, unlike direct treatment, do not encourage self-regulation of behaviour, and once the intervention is withdrawn, or the environment is altered so that the same contingencies no longer apply, the aggressive behaviour is likely to reappear. In addition, as discussed earlier, behavioural procedures are less effective with low-frequency aggression and require high levels of staff input in order to be maintained. Many forensic patients with severe anger problems associated with a range of

offending behaviour, including sexual offending and firesetting, are not overtly aggressive on a regular basis. Also, many clients with these types of difficulties are not residing in well-staffed and supervised settings, but are seen in the community by teams with varying levels of expertise and resources. Therefore the utility of behavioural interventions per se directed at aggression is questionable with this population. For these reasons it is important for workers in this area to continue to consider the development of better defined assessment and direct treatment approaches for anger problems amongst people with developmental disability. Table 3 sets out those studies (post-1985) that have evaluated cognitive-behavioural approaches to anger problems in people with developmental disability.

There is very little in the literature concerning anger treatments for offenders with developmental disability. A number of researchers and clinicians have reported on case and case-series studies involving people with developmental disability and histories of seriously aggressive behaviour in in-patient and community settings. Use of combinations of cognitive-behavioural techniques including self-monitoring, relaxation and skills training led to significant reductions in levels of aggression that facilitated community resettlement and integration and access to occupational opportunities.

Table 3

Primary Studies (post-1985) of Cognitive-Behavioural Approaches to the Treatment of Anger in People with Developmental Disability

Study	Grade*	Design*	Subjects	Setting (I/C)**	Treatment format / components	Duration	Dependent variable(s)***	Outcome	Follow-up
Benson *et al.* (1986)	2	Group study RCT	37 men 17 women mild-mod LD	C	Group therapy format: Self-instruction vs. Relaxation vs. Problem-solving vs. Combined condition	12 weekly 90 min. sessions (Total = 18 hours)	AI (SR) IP (SR) Role-play (OB) Aggression (OB)	Significant pre-post reductions for all conditions on IP, role-play & aggression measures – no significant between group differences	Treatment gains maintained at 4-5 weeks follow-up
Murphy & Clare (1991)	4	Case study	1 male mild LD	I	Multiple, staged individual and group therapy interventions: Self-monitoring Social skills training Coping skills training Relaxation training Token economy	Unclear/ varied over 49-week period	Aggression (OB)	Despite fluctuations during the intervention period, recorded incidents of verbal and physical aggression reduced markedly so that the subject was able to be discharged to a staffed community residential facility	At 10 month follow-up subject continued to make progress and was still living in the same community facility
Black & Novaco (1993)	4	Case study	1 male mild LD	I	Individual therapy format: Self-monitoring Psycho-education Arousal reduction Coping skills training	28 sessions 40 mins. Each (Total = 18.7 hours)	Anger diary (SR) Aggression (OB) Pro-social behaviour (CR)	Reduction in frequency of observed aggressive behaviour and increases in pro-social behaviours – self-reported anger increased	Staff-rated improvements maintained during 21-week follow-up
Cullen (1993)	4	Case series	12 mild-mod LD	C = 2 I = 10	Group therapy format: Self-monitoring Education Relaxation training Behavioural skills training	Up to 100 hours – twice weekly sessions over 1 year	Anger diary (SR) Aggression (OB) Social behaviour ratings (CR)	Mixed results – frequently aggressive subjects showed greatest improvements; no improvements on social behaviour ratings; self-recordings not reported	Unspecified period of f-up; treatment effects unclear

* Grade1 = Systematic review including at least 1RCT; 2 = RCT study; 3 = Group controlled study without randomisation or comparison group; 4 = Systematic study without randomisation or comparison group; 5 = Expert opinion: RCT = randomised controlled trial; CT = controlled trial (without randomisation); A-B = pre-post intervention assessment (without randomisation or comparison group)

** I = Institutional setting; C = Community setting

*** AI = Anger Inventory; IP = Imaginal Provocation; PI = Provocation Inventory; RPP = Role-play Provocation; (SR) =Self-report; (OB) = Observed behaviour; (CR) = Carer-rated

Table 3 *continued*

Study	Grade*	Design*	Subjects	Setting (I/C)**	Treatment format / components	Duration	Dependent variable(s)***	Outcome	Follow-up
Rose (1996)	4	Case series	2 men 3 women mod-severe LD	C	Group therapy format: Relaxation training Self-monitoring Identification of triggers Emotional recognition Coping skills training Self-instruction Thought-stopping	16 sessions of 90 min. over 19 weeks (Total = 24 hours)	Anger diary (SR) Anger log (CR)	All subjects were reported by carers as having fewer aggressive incidents per month at the end of treatment than during the 3-month baseline period	At 3-month follow-up all subjects reported as having fewer incidents than during baseline
Moore *et al.* (1997)	4	Group study A-B	2 men 3 women mild–mod LD	C	Group therapy format: Emotional recognition Self-monitoring Relaxation training Role-play Problem-solving skills	8 weekly 90 min. sessions (Total = 12 hours)	Anger diary (SR) Anger log (CR)	Thirty-nine percent reduction in angry/aggressive incidents reported by subjects at the end of treatment over a brief (2-week) baseline; treatment gains corroborated by keyworker staff	6-month informal follow-up – no data collected but informants suggested that gains were maintained
Walker & Cheseldine (1997)	4	Case series	4 men LD level unclear	C	Group therapy format: Psycho-education Social skills training Relaxation training Self-instruction	8 weekly 90 min. sessions (Total = 12 hours)	PI (SR)	Pre-post PI responses indicate that 3 subjects reported reduced tendency to respond to provocation in an aggressive manner and increased use of constructive coping strategies	None
Lawrenson & Lindsay (1998)	4	Case Study	1 male mild LD	C	Group therapy format: Psycho-education Relaxation training Problem-solving skills Distraction techniques Self-instruction Role-play	26 weekly 50 min. sessions (Total = 21.7 hours)	AI (SR) PI (SR)	Following intervention subject reported less intense anger reactions in response to a range of situations and more constructive coping, as opposed to aggressive, behavioural responses. Some anecdotal evidence from staff carers to support these improvements.	None

* Grade1 = Systematic review including at least 1RCT; 2 = RCT study; 3 = Group controlled study without randomisation or comparison group; 4 = Systematic study without randomisation or comparison group; 5 = Expert opinion: RCT = randomised controlled trial; CT = controlled trial (without randomisation); A-B = pre-post intervention assessment (without randomisation or comparison group)

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Table 3 *continued*

Study	Grade*	Design*	Subjects	Setting (I/C)**	Treatment format / components	Duration	Dependent variable(s)***	Outcome	Follow-up
Lindsay *et al.* (1998)	4	Case series	3 men 2 mild LD 1 severe LD	C =1 I = 2	Individual therapy format – differed for each subject: Self-monitoring Relaxation training Emotional recognition Psycho-education Role-play	Varied between 50 daily sessions over 10 weeks – weekly sessions for 6months	Aggression (SR) Aggression (OB) PI (SR) RPP (OB) Anger ratings (SR)	Marked reduction in observed aggression in 2 subjects treated in institutional settings & reductions in self-reported anger and role-play provocation scores for subject treated in a community setting	Length of f-up varied from 24 weeks to 4 years; 2 patients maintained treatment gains and the third regressed following transfer to another unit
Rossiter *et al.* (1998)	4	Case series	4 men 2 women mod-severe LD	C = 2 I = 4	Group therapy format: Psycho-education Self-monitoring Relaxation training Self-instruction Role-play	8 weekly 90 min. sessions (Total = 12 hours)	None	Unclear as no objective outcome measures were used to establish baseline levels of anger/aggression frequency, intensity or duration; clinical impressions were that all but one subject benefited from the intervention	12 week follow-up indicated that 4 of the five subjects were less aggressive than before beginning treatment
King *et al.* (1999)	4	Group study A-B	7 men 4 women mild LD	C	Group therapy format: Education Relaxation training Self-instruction Problem-solving skills	15 weekly 90 min. sessions (Total = 22.5 hours)	AI (SR) Self-esteem (SR) AI (CR) Behaviour Checklist (CR)	Self-reported anger reactivity was reduced significantly following treatment; caregiver ratings of problem behaviours significantly improved	Anger reaction and self-esteem (SR) & OB effects maintained at 12-week follow-up
Rose & West (1999)	4	Case series	5 men mild-mod LD	C	Group therapy format: Relaxation training Self-monitoring Identification of triggers Emotional recognition Coping skills training Self-instruction Thought-stopping (in 4 cases augmented by individual, staff or behavioural interventions)	16 weekly 2 hour sessions (Total = 32 hours)	AI (SR) Aggression (OB)	Mixed and difficult to determine effects of anger management intervention vs. other external factors; in 3 cases observed challenging behaviour appeared to decrease over time and reductions in self-reported anger inventory scores were observed	Variable follow-up periods for participants; in general self- and staff-reported improvements maintained

* Gradel = Systematic review including at least 1RCT; 2 = RCT study; 3 = Group controlled study without randomisation or comparison group; 4 = Systematic study without randomisation or comparison group; 5 = Expert opinion: RCT = randomised controlled trial; CT = controlled trial (without randomisation); A-B = pre-post intervention assessment (without randomisation or comparison group)

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Table 3 *continued*

Study	Grade*	Design*	Subjects	Setting (I/C)**	Treatment format / components	Duration	Dependent variable(s)***	Outcome	Follow-up
Howells *et al.* (2000)	4	Case series	3 men 2 women mild LD	C	Group therapy format: Emotional recognition Self-monitoring Identification of physical and cognitive triggers Coping skills training Problem solving skills Role-play with video feedback	12 weekly 2 hour sessions (Total = 24 hours over 18 weeks due to break)	Anxiety scale (SR) Self-esteem inventory (SR)	Pre-post changes on the anxiety and self-esteem scales were did not provide conclusive evidence of any treatment effect; aggression frequency data from informants not reported due to problems with its reliability; no self-report anger or aggression measures taken.	None
Rose *et al.* (2000)	2	Group study CT	23 men 2 women mild-mod LD	C	Group therapy format: Relaxation training Self-monitoring Identification of triggers Emotional recognition Coping skills training Self-instruction Thought-stopping Role-play with video feedback	16 weekly 2 hour sessions (Total = 32 hours)	AI (SR) Self-concept scale (SR) Depression Inventory (SR)	Significant reductions in reported anger and depression levels post-treatment; non-significant improvement in self-concept following intervention	Significant improvements in reported anger levels maintained at 12 months follow-up; improvements in self-concept maintained; levels of depression increased from post-treatment level during the follow-up period
Taylor *et al.* (2002)	2	Group study RCT	20 men mild LD	I	Individual therapy format: Psycho-education Self-monitoring Cognitive re-structuring Relaxation training Self-instruction Role-play	18 twice weekly 60 min. sessions (Total = 18 hours)	PI (SR) Anger attributes (CR) Anger coping skills (CR)	Post-treatment PI scores were significantly lower for subjects in the treatment condition (TC) compared to the wait-list control subjects; staff reported non-significant improvements for TC subjects on anger attribute and coping skills measures	At 1 month follow-up staff reported slightly improved anger coping skills for TC patients

* Gradel = Systematic review including at least 1RCT; 2 = RCT study; 3 = Group controlled study without randomisation or comparison group; 4 = Systematic study without randomisation or comparison group; 5 = Expert opinion: RCT = randomised controlled trial; CT = controlled trial (without randomisation); A-B = pre-post intervention assessment (without randomisation or comparison group)

** I = Institutional setting; C = Community setting

*** AI = Anger Inventory; IP = Imaginal Provocation; PI = Provocation Inventory; RPP = Role-play Provocation; (SR) =Self-report; (OB) = Observed behaviour; (CR) = Carer-rated

Murphy and Clare (1991) reported a case study involving a young man with developmental disabilities and a history of violence towards members of staff in an in-patient setting. Use of simplified anger control techniques, coupled with a behavioural programme, resulted in a reduction of aggressive behaviour and rehabilitation to a community placement. Black and Novaco (1993) reported the treatment of a middle-aged man with developmental disabilities, living in a secure setting, with a history of verbal and physical aggression. Using a modification of Novaco's (1975) anger treatment protocol significant treatment gains were achieved with regard to the client's anger control enabling him to be transferred to the community.

In a small case series study Lindsay *et al.*(1998) reported on the successful use of different forms of relaxation training, cognitive mediation and distraction techniques, and behavioural skills training to markedly reduce the frequency of aggressive outbursts by three men with differing levels of developmental disability and various concomitant problems. All had long histories of seriously aggressive behaviour necessitating in-patient care. Rose and West (1999) reported on the outcomes for five men who had taken part in a group therapy programme aimed at helping them express anger in more appropriate ways. All participants lived in community settings and had anger problems that were assumed to have led assaults on others and/or repeated damage to property. The intervention was multi-facetted and involved self-monitoring, psycho-education, coping skills and relaxation training, and self-instruction. The outcomes of this intervention were difficult to interpret. There was some evidence to indicate reductions in self-reported anger levels and frequency of carer rated aggressive behaviour in some cases following

treatment. However, levels of each fluctuated over time, seemingly in response to external factors. Other confounding issues include four participants receiving individual interventions during the group treatment period. Also, direct care staff accompanied clients to the group sessions and were encouraged to participate actively in them. It is possible, therefore, that any reductions in the frequency of aggressive behaviour were associated with increased staff knowledge and awareness concerning anger issues and improved skills in preventing and managing aggressive incidents rather than effects of treatment on the clients.

Although none of these case and case-series studies involved subjects that might be classified as 'forensic' cases, it would appear from the severity of the aggressive and assaultive behaviour of some of those described that they were at risk of becoming convicted offenders. Howells, Rogers and Wilcock (2000) attempted to evaluate a group cognitive/behavioural approach to teaching anger management skills to five adults with learning disabilities who were referred "because of difficulties in managing their anger" (p. 138). The two female members of the group had histories of verbal aggression. Two of the male clients in this group did have convictions for assault and the third male had outbursts of verbal aggression, damage to property and had committed a sexual assault in the past that had led to hospital admission. At the time of the study all participants lived in community settings with varying levels of support. The group delivered intervention was noteworthy in that, unlike previous studies, it gave limited, but explicit attention to the content of cognitions that aroused anger and alternative "anger-calming thoughts" (p. 141). Unfortunately, it does not appear that this cognitive re-structuring work was carried over or integrated in a concerted fashion into the skills training component of the

intervention. Also, the authors failed to take baseline or follow-up measures, had difficulty in collecting reliable incident data from informants and didn't administer any pre-treatment anger self-report measures. Therefore, beyond positive feedback from participants, it is not clear that this intervention had any effect on the anger and aggression problems experienced by clients.

In addition to these case and case-series studies, with their attendant methodological limitations, Cullen (1993) described a pilot group treatment for two or three people at a time (total $N = 12$) for men with developmental disability and histories of aggression, damage to others and to themselves. Two of this sample lived in their parental homes and the remainder was resident in locked hospital wards or on a behavioural treatment unit. The intervention consisted of a baseline period during which self-recording was introduced, followed by an educational phase. A skill acquisition phase was introduced next, including role-play of behavioural coping skills and practice of relaxation procedures to reduce tension associated with anger. Finally, there was a follow-up phase during which outcome measures were collected. Outcomes for treatment participants were mixed. However, treatment effects were best for those who had the highest frequency of anger outbursts during the baseline period.

Rose (1996) reported on a group treatment for five people with moderate to severe developmental disability. The treatment was based on Novaco's approach involving education, emotional identification and recognition, arousal reduction, self-instructional training, and role-play to practice effective problem solving. All participants resided in community settings and had histories of physical assault on other people and/or repeated damage to property. Logs of aggressive behaviour were

kept by both clients and carers prior to, during and following treatment. Reductions in aggressive behaviour occurred following group treatment and were maintained at three months follow-up. The use of cognitive techniques as part of this treatment was judged to be ineffective and it is reported that role-play was the most useful technique used with this group. In another study, King, Lancaster, Wynne, Nettleton and Davis (1999) used a similar group treatment package and a pre-post assessment research design with 11 adults with mild developmental disability residing in community facilities referred because of anger control problems. Pre-post treatment outcome measures showed significant treatment gains on a self-report anger and self-esteem inventories and these gains were maintained at 12-week follow-up. Clinical impressions were that all components of the programme were worthwhile and necessary. However, both these studies lacked a control condition, had short follow-up periods and the reliability of the outcome measures used in the Rose study was not established.

Other evaluations of group-based anger management treatments using cognitive-behavioural approaches for people with mild to severe levels of disability have suggested promising outcomes in spite of substantial methodological flaws and weaknesses including lack of adequate baseline measures, comparison groups and robust outcome measures (Moore, Adams, Elsworth & Lewis, 1997; Rossiter, Hunniset & Pulsford, 1998; Walker & Cheseldine, 1997).

Only two anger treatment studies involving comparison groups have been carried out with clients with developmental disability. In a group treatment study involving 54 community-based clients with temper control problems, Benson Johnson- Rice and Miranti (1986) obtained significant treatment effects on self- and

staff-rated outcome measures and role-play ratings using modifications of the Novaco treatment components across four conditions. There were no significant differences between the groups (self-instruction, relaxation training, problem-solving and a combined condition). However, it is difficult to draw clear conclusions from this study as it did not include a no-treatment control group. Rose, West and Clifford (2000) described an evaluation of a group intervention for reducing expressed anger in 25 people with developmental disability registered with local community-based health and social services. All participants had histories of physical assault on others, or repeated damage to property, or severe and repeated verbal aggression. A number of groups were held over a two year period and those waiting for treatment were assessed 4 months before treatment and again immediately before intervention to create a waiting list control group. The content of the group treatment was similar to that used in the Rose (1996) study although some innovations, such as the use of self-monitoring diaries, were included in order to reach a formulation for each participants aggressive behaviour. A direct carer accompanied each participant to all group sessions to encourage collaborative working and to facilitate transfer of skills to every day settings. Results showed that self-reported expressed anger and depression scores were reduced significantly as a result of the treatment and these improvements were maintained at 12 months follow-up. Some weaknesses of this study include the use of outcome measures that have only limited reliability and validity data available and a lack of behavioural or observer-rated outcome measures. Further, the research design resulted in some participants who were part of the control group also being included in the treatment group.

In a recent pilot study, Taylor, Novaco, Gillmer and Thorne (2002) (see Appendix 19) reported on a pilot study involving 20 detained patients with developmental disability and histories of offending. Patients were allocated to modified cognitive-behavioural anger treatment or to routine care waiting-list control conditions. Eighteen sessions of individual treatment were delivered by the same therapist over a period of 12 weeks. The treatment protocol for this study was a major re-working of Novaco's (1975; 1993) treatment approach which was designed specifically for use with people with mild to moderate developmental disability levels. Six sessions of a broadly psycho-educational 'preparatory phase' of treatment was offered initially. This was aimed at desensitising patients to any anxieties that they might have about embarking on intensive psychological therapy. Following successful completion of the preparatory phase, patients moved on to the 12 session 'treatment phase' the core components of which were cognitive re-structuring, arousal reduction and behavioural skills training. Patients' self-report of anger intensity to provocation was significantly lower following intervention in the treatment condition compared to the waiting-list condition. Some limited evidence for the effectiveness of treatment was provided by staffs' ratings of patients' anger disposition and coping behaviour post-treatment. The conclusions from this study were that detained offenders with developmental disability can benefit from intensive individual cognitive-behavioural anger treatment and that further research is required to examine the mechanisms for change and their sustainability.

3.6 Conclusions

The reviews by Baumeister et al. (1998), Brylewski and Duggan (2000) and Matson *et al.* (2000) indicate that there is little or no evidence for the effectiveness of psychoactive medications as first line treatments in reducing aggression in people with developmental disability. It would appear that the routine use of these compounds cannot be justified given their lack of specificity and variable and unpredictable effects on individuals, including serious negative side-effects and dampening of adaptive behaviour. The synergistic effects of combining drug therapies with psychological treatments such as cognitive-behavioural therapy has not been evaluated in a methodologically sound and systematic manner in the same way as for some other mental health problems including depression and psychosis. This maybe a fruitful area for further research.

Whitaker (2001) concluded that the experimental evidence is weak for cognitive-behavioural treatment approaches with this client group compared with the evidence for behavioural interventions. However, behavioural interventions do not lead to the development of self-control and coping skills that can transfer across a range of dynamic settings. That is, they tend to be situation specific. Further, most of the studies of the impact of behavioural interventions have involved people with relatively high levels of developmental disability engaged with 'challenging behaviour' services, not high functioning users accessing forensic services. In addition, it is clear that the application of relatively unintrusive and more ethically acceptable behavioural interventions have not been proven outside of very controlled and unnatural settings with high staff ratios. Finally, the effectiveness of these types of interventions with low frequency behaviour of the type found more often amongst

forensic patients is questionable. Therefore, it is important for workers in this area to continue to develop direct treatment approaches more appropriate for work with anger and aggression problems in people with developmental disability and forensic backgrounds – and to carry out more robust evaluations of their effectiveness.

From the little work completed to date in this field it appears that people with anger problems and developmental disability benefit most from the non-cognitive components of treatment packages including relaxation, self-monitoring and skills training through role-play (Rose, 1996; Rose *et al.*, 2000; Whitaker, 2001). It has been suggested that the lack of evidence for the effectiveness of the cognitive components of anger treatments is related to the complexity of these techniques and the difficulties that people with developmental disability have in comprehending, assimilating, recalling and utilising them (Whitaker, 2001). However, scrutiny of the reports on those studies that purport to have incorporated cognitive techniques similar to those described by Novaco (1975) suggests that the main cognitive techniques used have been skills training procedures such as self-instruction and inter-personal problem-solving. The aim of these interventions has been to ameliorate cognitive process deficits rather than to identify and modify cognitive content (faulty thoughts and beliefs) associated with the anger control problem. It is perhaps unsurprising then that the available evidence supports the effectiveness of treatment components that have been focused on in therapy sessions, that is self-monitoring, relaxation and skills training. The evidence for the utility of cognitive content techniques is likely to be comparatively weak as thus far they have not been included substantively in treatment packages for people with developmental disability. This is the case particularly with regard to *cognitive re-structuring*

procedures. The recent pilot study by Taylor *et al.* (2002) challenged to some extent the presumption that people with developmental disability find cognitive-re-structuring procedures too difficult. A treatment delivered individually to offenders with developmental disability that had at its core cognitive re-structuring was successful in significantly reducing anger intensity to provocation.

It would seem inappropriate at this stage, therefore, to disregard cognitive techniques that have not been rigorously implemented and evaluated with people with developmental disability in forensic settings. It may be more helpful to provide different combinations of treatment techniques for specific anger problems experienced by individuals in particular contexts. For example, it could be beneficial to work on inter-personal skills training with clients who need to change the way they express their anger to others, and it probably would not be as effective to focus on cognitive content techniques. The reverse is likely to apply also for those clients whose primary anger problem is associated with maladaptive thoughts and beliefs.

Recently Novaco *et al.* (2000) differentiated between several levels of psychological intervention for anger problems. Anger management provision can be characterised as planned and systematic psycho-educational approaches guided by cognitive-behavioural principles and often delivered in a group format. The content of this intervention type is structured but can vary considerably. It is less intensive than anger treatment provision and it is not driven by analysis and formulation of an individual's anger problems and treatment needs. Most of the studies carried out to date with people with developmental disability and anger problems would fit into this category. Cognitively based anger treatments aim to help modify thoughts and beliefs so that the degree of anger induced by a provocation remains at a level that

allows the individual to cope with the situation effectively. This level of intervention is appropriate for high anger people whose difficulties are often deep-rooted and chronic. It requires delivery by trained and supervised therapists on an individual basis in order to promote a therapeutic relationship that can overcome client resistance to and fear of change. These characteristics are often observed in people with developmental disability and offending histories presenting to forensic services.

CHAPTER 4: AIMS AND OBJECTIVES

4.1 Assessment of Anger and Aggression

As there has not been an empirical study examining anger assessment issues with an inpatient population of people with developmental disability, the initial assessment study of the Anger Research Programme aimed to address the following research questions:

- Is it feasible to assess anger in a coherent manner with this population and so establish anger measure norms for it?
- What is the prevalence of anger and aggression among patients in this population?
- Do assessments of anger with this population have reliability and validity?
- What is the relationship between anger, aggression and violent behaviour in this population?

4.2 Cognitive-behavioural Treatment of Anger

Given that, to date, only one study has investigated the effectiveness of an individually delivered cognitive-behavioural anger treatment with hospitalised people with developmental disability and significant offending histories, the anger treatment study component of the Anger Research Programme attempted to answer the following questions:

- Can a modified cognitive-behavioural anger treatment protocol, with cognitive re-structuring as one of its central features, produce significant treatment effects, as measured by a range of self- and informant-rated measures of anger, in an inpatient group of developmentally disabled offenders?

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- Are any effects achieved through the application of this protocol significantly different to those observed in a comparison group of patients that did not receive the treatment?
- Are any measured improvements in patients' anger problems obtained as a result of treatment maintained when follow-up assessments are administered?
- Is it possible to identify and delineate any of the mechanisms, mediators or moderators that have an effect on the outcome of this new treatment protocol?
- What, if any, is the impact of anger treatment on care staffs' perceptions of their abilities to understand and deal with clients' anger problems?

Through this scientific enquiry it is hoped that robust evidence can be produced that will guide the development of a high quality clinical programme designed to reduce the anger control problems experienced by this complex and needy group of patients. Unidentified and untreated these problems can impact significantly, and sometimes devastatingly, on the lives of these individuals and those of others with whom they come into contact.

CHAPTER 5: METHOD I – ASSESSMENT STUDY

5.1 Setting

Northgate Hospital is part of the largest National Health Service Trust in the UK that provides specialist services to people with developmental disabilities. It is situated approximately 14 miles north of Newcastle upon Tyne, near Morpeth in the Northeast of England. The hospital provides inpatient forensic services on a local, regional and national basis. Patients are referred to the forensic services via Health Authorities, the courts, and prisons. Northgate Hospital has seven forensic units and wards providing medium secure, low secure, and rehabilitation facilities for around 160 patients, approximately 22 (14%) of whom are woman. All of the units/wards are single sex.

5.2 Participants

All female patients were excluded from the study. Male patients who were about to be discharged or transferred were not included. This left 129 patients who participated in the study representing 94% of the total population (N = 137) of the men's forensic service in the hospital at the time. Selected demographic, cognitive and personality characteristics of the patients that participated in the study are presented in Table 4.

Of the 129 study participants, 121 (94%) were subject to sections of the England and Wales Mental Health Act 1983, and the majority (67%) were detained under criminal sections of the act (s. 37, 37/41, 35, 47 or 49) indicating that they had been processed by the criminal justice system prior to admission. Only 8 (6%) were 'informal' or voluntary patients.

Table 4
Patient Demographic, Cognitive and Personality Characteristics

	N	*Mean*	*Median*	*SD*
Age	129	33.2	30.1	11.6
Length of stay (years)	129	3.7	3.0	3.5
WAIS-R Full Scale	121	67.5	69.0	8.0
WAIS-R Verbal	121	67.9	68.0	7.6
WAIS-R Performance	121	71.2	70.0	9.0
WORD Basic Reading Age (years)	105	8.3	7.7	3.7
WORD Reading Comprehension Age (years)	105	7.1	7.2	3.1
Nowicki-Strickland Locus of Control	99	18.3	18.0	4.1
EPQ-R Short-Form:				
Psychotisism	107	3.5	3.0	1.8
Extraversion	107	7.8	8.0	3.3
Neurotisism	107	7.8	8.0	4.0
Lie Scale	107	6.1	6.0	3.7
Impulsiveness Scale:				
Impulsiveness	107	9.3	10.0	3.4
Venturesomenes	107	8.4	9.0	4.2
Empathy	107	10.9	11.0	3.4

Note. All of the participants are male patients at Northgate Hospital

Approximately 36% of the 129 patients who were assessed had previous convictions for violent behaviour, and a further 38% had no convictions for violence but had a documented history of violence or aggressive behaviour. The remaining 26% had no documented history of aggression or violence; however thirty of these

34 people had convictions for sexual aggression, fire-setting or property related offences (e.g. burglary, car theft, fraud).

Of the 129 participants in this study 43% (n = 55) had convictions for sexual aggression, and 20% (n = 26) had been convicted for fire-setting offences. A total of 68 people in this population (53%) had convictions for property related crimes. Only 17 participants (13%) did not have any criminal convictions recorded, but in each case concerns had been documented regarding violent behaviour, sexual aggression, or both.

In addition to mental impairment,[1] just under 50% of patients in the study were noted in hospital records as having co-morbidity for personality disorder (18.6%), affective disorder (15.5%), psychosis (10.9%), and genetic syndromes such as Asperger's and Tourette's (3.2%).

It was not possible to assess all patients on every anger measure. For a number of reasons, including refusal to co-operate, cognitive function difficulties (mental state instability, poor concentration and attention, sensory deficits, etc.), and unexpected early discharge, full anger assessments could not be completed for 24 (18.6%) patients. These patients who were not fully assessed differed from the 105 (81.4%) in a number of ways. Assessment non-completers were significantly older ($\underline{M}$ = 43.8 years; SD = 14.9) than completers ($\underline{M}$ = 30.7 years; SD = 9.2), t (127) = 4.10, $p < .001$. Non-completers had spent more time in hospital ($\underline{M}$ = 5.2 years; SD = 4.3) than completers ($\underline{M}$= 3.3 years; SD = 4.3), but this difference was not significant. Staff-ratings of patient anger, using the 'anger attributes' index of the Ward Anger Rating Scale (WARS; see below), were significantly higher for non-

completers ($M = 11.4$; $SD = 7.5$) than for the completers ($M = 7.0$; $SD = 6.5$), t (125) = 2.77, $p < .01$. Completers had significantly higher full WAIS-R IQ scores (M = 69.0; $SD = 7.3$) than non-completers ($M = 60.2$; $SD = 7.3$), t (121) = 4.91, $p < .001$. Thus, non-completers were older, of lower intelligence, viewed by staff as more angry, and tended to have been in the hospital longer.

5.3 Procedure

The testing of patients was done routinely, either as part of new patients' post-admission assessments or during regular updating of existing patient assessment profiles. Clinical research assistants supervised by experienced clinical psychologists conducted the testing. Patients were tested individually in private rooms, either alone with the research assistant or with the assistant accompanied by a nurse escort, depending on patients' mental state and security status. In those cases where an escort was required, testing took place within line of sight of the nurse, who was not actively involved in the session.

The assistants, after initially introducing themselves to the patients, described the purpose of the anger assessment. Patients were told that everybody on their unit/villa was being asked to complete some tests concerning situations that make them angry, how angry they get, and how they act when they get angry. It was explained that this information might be helpful to the clinical team planning their treatment. They were told that even if they did not have any anger problems the information they provided would help to establish an anger treatment programme that might benefit others.

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[1] Mental impairment is a legal term defined by the Mental Health Act 1983 as "a state of arrested or incomplete development of mind which includes significant impairment of intelligence and conduct". A "significant" impairment of intelligence is not defined within the Act.

After carefully checking that the patient understood, he was asked if he would complete a number of questionnaires about anger.

If the patient agreed to the assessment, he was told that he could stop or have a break at any time. For most patients, two or three sessions of up to one hour each were required to complete the anger assessments. Due to the literacy problems experienced by many patients, the scales were read to everybody. It was explained to each patient that there were no right or wrong answers, that he could ask questions at any time, and that he should answer questions as carefully as he could. Following completion of the testing, patients were thanked for their co-operation, which they gave without payment, and were given the opportunity to ask further questions about the procedure and how the results of their assessments would be fed into the hospital's routine case review system. The order in which the anger measures were administered was counterbalanced, in order to control for any sequencing bias.

Staff involvement in the assessment of patients' anger difficulties was arranged through the unit/ward managers and qualified 'named nurses'. Each member of staff who completed rating scales knew the patient well and had significant contact with him during the period covered by the measures. Completion and collation of staff ratings was organised and supervised by the research assistants, who had briefed nursing colleagues about them at the outset.

In addition to personal, demographic, and diagnostic data, assistants also obtained information from hospital records regarding the number and type of previous convictions and number of physical assaults on staff or other patients since admission. Further, information from routine clinical assessments administered during the first 12 weeks following admission was collated from psychology case

notes, including the results of intellectual/cognitive functioning, literacy, and personality psychometrics. Intellectual/cognitive functioning was assessed using the Wechsler Adult Intelligence Scale– Revised UK version (WAIS-R UK). The WAIS-R UK (Lea, 1986) is a well-established and standardised measure of global intelligence. It is composed of 11 tests, six verbal and five non-verbal that either separately or together can yield, respectively, a Verbal, Performance and a Full Scale IQ. Literacy skills were assessed using the Wechsler Objective Reading Dimensions (WORD). The WORD (Rust, Golombok & Trickey, 1992) is made up of three subtests including Basic Reading and Reading Comprehension. It has been standardised in both the UK and America, and it has direct linkage with other Wechsler scales using co-normed data for its development. Descriptions of the anger and personality measures administered in this study are given below.

5.4 Measures

5.4.1 Spielberger State-Trait Anger Expression Inventory (STAXI).

The STAXI (Spielberger, 1996) is perhaps the most widely used anger measure in clinical and research settings. It was originally designed to assess those components of anger associated with different personality variables and to measure the impact of anger components on a variety of medical conditions. The STAXI is made up of 44 items organised into scales that give measures of *State Anger*, *Trait Anger*, and *Anger Expression*. The *Anger Expression* scale has sub-scales of *Anger-in*, *Anger-out*, and *Anger Control*. The STAXI has had extensive development and validation with normal, forensic, and medical populations. The internal reliabilities

of the State Anger and Trait Anger scales have been found to be .93 and .86, respectively (Spielberger, 1996).

A modified version of the STAXI was used as part of this study (see Appendix 1). The directions were altered so that the inventory could be administered as a structured interview, rather than as a self-completed test. Each of the ten *State Anger* scale items was prefixed with the temporal anchor "Right now", and the 22 *Anger Expression* scale items were prefixed with "When I'm angry" as a contextual cue. In addition, many items were altered in order to make the item meaning more explicit to a developmentally disabled patient group. For example, "I strike out at whatever infuriates me" became "When I'm angry – I hit out at whatever is making me furious". Finally, the labelling of two of the four scale points for the State Anger items was modified as follows: "Not at all" (same), "A little bit" (in place of "Somewhat"), "Quite a bit" (in place of "Moderately so"), and "Very much so" (same).

5.4.2 Novaco Anger Scale (NAS)[2].

The NAS (Novaco, 1994) is a self-report instrument containing *Cognitive*, *Arousal*, and *Behavioural* subscales, which comprise a *Total* score for anger disposition. The subscales relate to the three dispositional domains that are central to the view of anger described by Novaco (1994), as linked to an environmental context. The NAS was developed and validated for use with mentally disordered as well as normal populations. Since its inception, it has received independent

[2] The Novaco Anger Scale (NAS), Provocation Inventory (PI), and Ward Anger Rating Scale (WARS) were all very kindly supplied by Professor Raymond Novaco, University of California, Irvine, USA for modification and use in this research programme. The NAS and PI are about to be published by Western Psychological Services, Los Angeles, CA, USA.

validation (Grisso, Davis, Vesselinov, Appelbaum & Monahan, 2000; Jones, Thomas-Peter & Trout, 1999; Mills, Kroner & Forth, 1998). The NAS has subsequently been revised to include an *Anger Regulation* subscale and to replace four items in the *Cognitive* domain subscale.[3] The full NAS thus contains 60 items rated on three-point scales, including 48 items comprising the *Total Anger* score, plus the 12-item *Anger Regulation* scale. The NAS Total was found to have internal reliability (alpha) of .95 and a test-retest (two-weeks) reliability of .84 in studies with psychiatric patients in the California State Hospital system (Novaco, 1994). In the Mills *et al.* (1998) study with male offenders in Canada, the alpha for the NAS Total was found to be .95 and test-retest reliability was .89 for a four-week interval.

The NAS was modified for use with developmentally disabled patients in the current study (see Appendix 2). Some items were altered to simplify meaning: e.g., "People act like they are being honest when they really have something to hide" was changed to "People pretend they are telling the truth, when they are really telling lies". Other items were elaborated to make the meaning more concrete and accessible: e.g., "If someone is bothering me, I try to understand why" was elaborated by adding, "for example, if someone is annoying you, do you stop and think they might have a reason, like they are having a bad day". The NAS was presented in a structured interview format, rather than as a self-administered pencil and paper test.

[3] Four items regarding "attentional focus" were replaced by four items concerning "justification" due to weak results with the former item set and the theoretical relevance of the latter. Data pertaining tothe Anger Regulation sub-scale are not included in this study, as that measure is still in development.

5.4.3 Provocation Inventory (PI).

The PI is an anger reaction inventory that was developed to accompany the NAS. It is a shortened version of the Novaco Provocation Inventory (Novaco, 1975; 1988) and was first implemented as NAS Part B, but it is now a separate instrument. The PI consists of 25 items providing an index of anger intensity and generality across a range of potentially provocative situations. Research with California State Hospital patients found an alpha of .95 and test-retest reliability of .86 (Novaco, 1994). The PI has been independently validated (as NAS Part B) in the studies by Grisso *et al.* (2000) and Mills *et al.* (1998). In the latter study with male offenders, the alpha was .96 and the test-retest reliability was .85.

For use in the present research, the PI was also modified to (a) make the item meaning more accessible to the target population, and (b) increase the relevance of the provocation items to patients living in secure, semi-secure or highly supervised forensic environments. For example, the elaboration "For example, everyone in your unit does something silly, but you are the only person who is told-off" was added to "Being singled out for correction, when someone else doing the same thing is ignored". This scale was also presented to patients in a structured interview format, rather than as a self-administered assessment. A copy of the modified PI can be found at Appendix 3.

5.4.4 Ward Anger Rating Scale (WARS).

The WARS is a two-part scale to be completed by a member of ward staff who knows the patient well and has observed the patient's behaviour during the previous

week (see Appendix 4). It was developed by Novaco (1994) in conjunction with NAS validation testing and is designed for ease of recording in busy clinical settings. Part A consists of 18 dichotomous ratings regarding verbal and physical behaviours associated with anger and aggression. Part B of the instrument consists of seven items regarding 'anger attributes' rated on a five-point scale (not at all, very little, sometimes, fairly often, very often).

Five of the WARS Part A items are summed for an 'antagonistic behaviour' index, which concerns overt verbal and physical aggression directed at another person. The items included are "verbally abused someone", "verbally threatened to attack a staff member", "verbally threatened to attack a patient", "physically attacked a staff member", and "physically attacked a patient". The sum of the seven WARS Part B anger attribute ratings produce an Anger Index. In a study involving mentally disordered offenders at the maximum security State Hospital in Scotland, the inter-rater reliability (calculated as percent agreement) for Part A of the WARS was found to be 94.7% and was between 89.7% and 100% for the five items comprising the antagonistic behaviour index (Novaco & Renwick, 2002). The internal consistency for the seven-item Anger Index was found to be .88 (Cronbach alpha). Significant concurrent validity and predictive validity were obtained for both indices in association with other staff-rated and self-report measures of anger and aggression, and with violent incident data (Novaco & Renwick, 2002).

5.4.5 Personality Measures.

Several brief personality measures administered to patients as part of the routine post-admission assessment battery were included in the study. These were the

Eysenck Personality Questionnaire-Revised Short Scale (EPQ-R Short Scale; Eysenck & Eysenck, 1991), the Impulsiveness Questionnaire (IVE; Eysenck & Eysenck, 1991), and the Adult Nowicki-Strickland Internal/External Scale (ANSIE; Nowicki & Duke, 1974).

The EPQ-R Short Scale is a 48-item instrument which produces scores on scales for *psychoticism* (P or "tough-mindedness"), *extraversion/introversion* (E), and *neuroticism* (N or "emotionality"). A *lie* (L) scale is also included, which in conditions of low motivation for dissimulation is thought to measure social naivete or conformity. The internal reliabilities for the EPQ-R Short Scale scales are .62 (P), .88 (E), .84 (N), and .77 (L) (Eysenck & Eysenck, 1991).

The IVE was used to measure *impulsiveness* which is related to reckless behaviour, *venturesomeness* which concerns calculated risk-taking, and *empathy*. This 54-item instrument has internal reliabilities of .84, .85, and .69 for the impulsiveness, venturesomeness, and empathy scales, respectively (Eysenck, Pearson, Easting & Allsopp, 1985).

The ANSIE was administered as a measure of perceived locus of control. This is a 40-item scale requiring "yes" or "no" answers and was derived from a previously developed children's measure (Nowicki & Strickland, 1973). Split-half reliability has ranged from .74 to .86 across studies (Lefcourt, 1991). Test-retest reliability has been found to be .83 with a six-week interval.

As with the anger measures, all of the personality measures used were modified for use with a developmentally disabled patient population and were administered in a structured interview format. Copies of the modified versions of the EPQ-R Short Scale, IVE and ANSIE can be found at Appendices 5, 6 and 7 respectively.

CHAPTER 6: RESULTS I – ASESSMENT STUDY

6.1 Reliability and Concordance of Anger Measures

Seeking to determine whether anger can be assessed coherently with a developmentally disabled population, we examined (a) the internal reliability of the anger self-report and staff-rated measures, (b) the correspondence between the patient self-report scales (STAXI and NAS) and between the anger self-reports by patients and the anger ratings by staff regarding those patients (WARS), and (c) test-retest reliability for a subset of cases on anger self-report.

The internal reliability coefficients (alpha) of the anger scales for the patient self-reports were as follows: STAXI State Anger = .87 (n = 112), STAXI Trait Anger = .86 (n = 112), NAS Total = .92 (n = 110), and PI = .92 (n = 114). For the staff-rated WARS anger index, alpha = .95 (n = 125). The means, medians, and standard deviations for these scales and for STAXI Anger Expression and NAS subscales are given in Table 5. For a sub-sample of 44 patients, a second self-report testing was conducted (two- to six-month interval). Test-retest correlations were State Anger (-.00), Trait Anger (.55), Anger Expression (.61), NAS Total (.53), and PI (.57).

The intercorrelations of the self-report anger scales are given in Table 6. There is a substantial association between the STAXI and the NAS, which are both measures of anger disposition. Trait Anger is correlated above .70 with each NAS index, except Cognitive (.47). Anger Expression is correlated .78 with NAS Total; among the Anger Expression subscales, the highest correlations with the NAS occur for Anger Out, which is correlated .73 with NAS Behavioral.

Table 5
Patient Anger Self-Report

	N	*Mean*	*Median*	*SD*
STAXI				
State Anger	112	11.6	10.0	3.7
Trait Anger	112	18.8	18.0	6.3
Anger Expression	112	30.8	32.0	11.2
Anger In	112	17.8	17.0	4.2
Anger Out	112	16.8	16.5	5.1
Anger Control	112	19.8	18.0	5.9
NAS				
Cognitive	110	32.7	32.5	5.2
Arousal	110	29.4	29.0	6.9
Behavioural	110	30.3	29.5	6.5
Total	110	92.4	92.5	16.6
PI Total	114	62.9	63.0	16.2

Note. The number of participants varies across measures, as the psychometric testing could not be done in some cases because the patients declined, their mental state precluded testing, or they were discharged. All participants are males.

For State Anger, which pertains to the level of anger experienced at the time of the testing, the correlation between that STAXI measure and each of the other anger scales is statistically significant ($p < .01$, two-tailed test) in all cases, except Anger Control, with the highest correlation occurring for NAS Cognitive ($r = .39, p < .001$).

Also given in Table 6 are the correlations between staff-rated anger (WARS) and the patients' self-rated anger. The correlations are significant ($p < .01$, two-tailed test) only for Anger Out ($r = .27, p < .01$) and NAS Cognitive ($r = .34, p < .001$), and

for the summary scores of the scales to which they contribute (Anger Expression and NAS Total).

Table 6
Intercorrelation of Self-Report (STAXI, NAS & PI) and Staff-Rated (WARS) Anger Measures

	STAXI						*NAS*				*PI*
	State Ang	Trait Ang.	Anger In	Anger Out	Anger Contr.	Anger Exprs.	NAS Cog.	NAS Ars.	NAS Behv.	NAS Tot.	
WARS											
Anger	.20 **	.19 *	.13 *	.27	-.16 *	.26	.34	.23 **	.21 **	.28	.05 *
STAXI											
State		.26	.27	.26	-.15 *	.29	.39	.31	.24	.35	.28
Trait Anger			.46	.63	-.38	.65	.47	.73	.72	.73	.59
Anger In				.29	-.20 **	.60	.43	.46	.35	.46	.35
Anger Out					-.46	.80	.53	.59	.73	.70	.33
Anger Control						-.80	-.42	-.47	-.51	-.55	-.31
Anger Expression							.64	.68	.72	.78	.44
NAS											
Cognitive								.66	.60	.82	.54
Arousal									.79	.94	.64
Behavioural										.90	.46
Total											.62

Note. For all correlations $p < .01$, except for those marked * ($p > .05$) and ** ($p < .05$) The coefficients presented are Pearson correlations for patient self-report anger measures and Spearman for the staff-rated measure. The correlations are for 112 patients on the STAXI, 110 patients on the NAS and 114 on the PI. The Ward Anger Rating Scale (WARS) is completed by the patient's key worker, who rates seven anger attributes on a five-point scale (alpha = .95 for 125 patients at Northgate Hospital), which are summed for an Anger Index.

6.2 Anger and Violent Offence History

The extent to which anger is associated with violence offence history was investigated by analysing group differences between 'no violence' patients (n = 32), who had no violent offences and no clinical concern about violence given in the case notes, and 'violence' patients (n = 78), who had a violence index offence, previous convictions for violence, or a documented history of violence without previous convictions. There were no significant differences between these violence offence groups on any of the self-report anger measures.

However, there were significant differences for staff-rated anger and aggression and for physical assaults, as presented in Table 7. Patients having violence offence histories were significantly higher in staff-rated anger and in staff-observed aggressive behaviour in the week of the obtained ratings, and they engaged in significantly more physical assaults since admission.

6.3 Anger and Assaultiveness in Hospital

We examined the retrospective association between anger and physical assault behavior in the hospital, so as to investigate the predictive validity of the anger measures. Patients were categorized dichotomously depending on whether they had ever been physically assaultive in the hospital (toward either staff or other patients), then the patient self-report measures and the staff-rated measure were analysed for mean differences between the 'no assault' versus the 'assault' groupings. The results are presented in Table 8. Patients with a history of physical assault in the hospital are significantly higher in both self-rated and staff-rated anger. Each of the

Table 7

Means Levels of Staff-Rated Patient Anger/Aggression and Physical Assaultiveness as Grouped by Violence Offence History

	Violence Offence History			
	No Violence	Violence	*t*	*p*
Staff-Rating Measure	5.53	8.58	2.25	.02
Anger Index (WARS)				
(*N* = 127)	(6.03)	(7.00)		
Aggressive Behaviour (WARS)	.38	.76	2.03	.045
(*N* = 127)	(.78)	(1.27)		
Assaultiveness				
Physical Assaults Since Admission	1.03	2.07	2.16	.033
(*N* = 129)	(2.05)	(3.23)		

Note. The means pertain to a one-week observation period. The WARS Anger Index is a seven-item scale (alpha = .95) of anger characteristics as judged by clinical staff (named nurse). The WARS Aggressive Behaviour measure is a sum of dichotomous recordings of five antagonistic behaviors. Standard deviations are given in parentheses below the means.

anger measures is statistically significant, except State Anger and Anger In, and the effects are highly significant ($p = .001$) for most measures.

We considered that assault history in the hospital might be related to patient background and aptitude variables, and hence the discovered relationship with the anger measures might then not be so noteworthy. However, whether or not the

patient had been assaultive in the hospital was not significantly related to age, length of stay, offence history (number of convictions, analysed for each type), or any of the cognitive ability measures.

To further differentiate the relationship of anger to assaultiveness, we also examined whether assault history in the hospital was related to the assessed personality factors. No significant differences were found between the 'no assault' and 'assault' groups on the Nowicki-Strickland Locus of Control measure. For the EPQ-R measures, no significant differences were found for Neuroticism or Psychoticism. For the IVE, there were no effects for Impulsiveness, Venturesomeness, or Empathy. Significant differences occurred for EPQ-R Extraversion, t (105) = 2.64, p = .01, and for the EPQ-R Lie scale, t (105) = 2.09, p = .04. Patients who are assaultive were found to be more extroverted and scored lower on the Lie scale. Scores on the EPQ-R Lie scale are inversely correlated with Trait Anger (-.22), Anger Expression (-.28), and NAS Total (-.23). This is consistent with the inverse relationship found between social desirability and measures of anger or violence in other clinical and normal populations (Novaco, 1975; Saunders, 1991).

6.4 Anger as a Predictor of Assaultiveness in Hospital

In order to test more fully the predictive value of anger regarding patient assaultiveness, a hierarchical regression with stepwise entry was conducted on the number of assaults by the patient since his admission to the hospital (M = 1.67, SD = 2.55). To reduce skewness, this variable was transformed to square root scores (M = .83, SD = .99). Patient age, full scale IQ (WAIS-R), and violence offence history were entered on the first step of the regression as a covariate block. These were

selected as control variables because of their a priori significance in relation to aggressive behaviour. Four anger summary indices were found above to significantly differentiate the 'assault' from the 'no assault' groups (Table 8).

Table 8
Anger as Assessed by Patient Self-Report and by Ward Staff with Patients Grouped According to Post-Admission Assaultiveness

	Assault History in Hospital			
	No Assault	Assault	*t*	*p*
Anger Measure				
STAXI (self-report)	(*n* = 59)	(*n* = 53)		
State Anger	11.4	11.8	.63	ns
Trait Anger	16.9	21.0	3.54	.001
Anger Expression	27.5	34.6	3.51	.001
Anger-In	17.4	18.2	1.02	ns
Anger-Out	15.4	18.5	3.32	.001
Anger-Control	21.3	18.1	2.98	.003
NAS (self-report)	(*n* = 57)	(*n* = 53)		
Cognitive	31.6	33.9	2.42	.017
Arousal	26.9	32.0	4.17	.000
Behavioral	27.8	33.0	4.60	.000
Total	86.2	99.0	4.32	.000
WARS (staff-rated)	(*n* = 67)	(*n* = 60)		
Anger Index	6.0	9.8	3.25	.001

Note. The tabled values are means for 127 male patients at Northgate Hospital. The number in each grouping varies across measures, as the psychometric testing could not be done in some cases because the person declined, his mental state precluded testing, or he was discharged.

Because the staff ratings of anger on the WARS could plausibly be affected by knowledge of a patient's assault history (even though those anger ratings are supposed to pertain to the patient's behavior in the given week), the WARS Anger index was not included in the hierarchical regression. The three remaining anger summary indices (STAXI Trait Anger, STAXI Anger Expression, and NAS Total), plus the EPQ Extraversion and the EPQ Lie scales, were incorporated as predictors – the latter two also having been found to significantly differentiate the 'assault' from the 'no assault' groups. Thus, these five self-report variables were then entered in a stepwise procedure, after the covariates, as predictors of hospital assaultiveness. The STAXI and NAS subscales were not entered because of multiple co-linearity.

The results of the hierarchical and stepwise regression are given in Table 9. The covariate block (age, IQ, and violence offence) results in a significant change in R^2 of .081, although this is primarily due to the effect of WAIS Full Scale IQ, which is inversely related to assaults. When the anger and the EPQ variables are examined, NAS Total enters on Step 2, producing a significant change in R^2 of .131, F_{change} (1,94) = 15.59, p = .000. EPQ Extraversion enters next, with a significant change in R^2 of .047, F_{change} (1,93) = 5.90, p = .017. The other anger variables were excluded as not significant. The partial correlations for the excluded variables at Step 3 are -.033 for Trait Anger, -.003 for Anger Expression, and -.132 for the EPQ Lie scale.

Table 9
Hierarchical Regression of Violence Risk and Anger Predictors of Patient Assaultiveness in Hospital

Predictors	beta	*t*	R^2	R^2 Change	F Change	*p*
Step 1						
Age	-.148	1.47				
WAIS-R (Full Scale)	-.214	2.12				
Violence Offence	.143	1.45				
			.081	.081	2.77 (3,95)	.046
Step 2						
NAS Total	.369	3.95				
			.211	.131	15.59 (1,94)	.000
Step 3						
Extraversion (EPQ)	.224	2.43				
			.258	.047	5.90 (1,93)	.017

Note. The dependent measure is the number of assaults since hospital admission (square root transformed). At Step 3, STAXI Trait Anger and Anger Expression and the EPQ-Lie scale were statistically excluded in the stepwise procedure. For the final model including the co-variates, NAS Total and EPQ-E, R = .508, F (5,93) = 6.48, p = .000

CHAPTER 7: METHOD II – TREATMENT STUDY

7.1 Setting

As for the assessment study, the treatment study was conducted at Northgate Hospital in Morpeth, Northumberland, near Newcastle in the North East of England. The forensic service comprises seven units for around 160 patients. Eighty-six percent of the forensic in-patient population are men. All of the units are single sex and provide medium secure, low secure and rehabilitation facilities depending on the assessed security needs of individual patients and their progress in rehabilitation.

The 30-bedded purpose built medium secure unit is made up of four independently functioning and staffed 'houses'. Sophisticated electronic locks, keys, alarm and surveillance systems ensure high levels of internal and perimeter security. Patients' movements within the unit are closely supervised by direct care staff and movement off the unit is restricted. All day services including occupation, education, leisure and sports are provided within the unit. The purpose built acute low secure unit has 26 beds divided into three separate 'flats'. These flats are locked externally and patient movement between them is supervised. Admissions to the hospital's forensic services are generally received into either of these medium or the acute low secure facilities.

A 20-bedded 'fast-stream' rehabilitation unit divided into two flats is available for those patients deemed appropriate for relatively rapid re-integration into community-based settings. These flats can be open allowing patients to come and go during prescribed periods depending on their 'ground leave' status. Taking account of the patient mix and situational factors at any particular time these flats can be locked and patients' movements more restricted. Two further units, each providing

up to 22 beds divided into two flats provide 'slow-stream' rehabilitation'. The operation of these units, and the flats within them, can be flexible depending on patient mix and security needs. The acute low secure and rehabilitation units are staffed 24 hours per day and patients access day services and leisure activities off-unit within the hospital grounds.

Around eleven additional pre-transfer/discharge beds are provided in three ordinary houses within the hospital grounds. Staff supervision within these facilities can vary from continuous to occasional depending on the needs of the patients. Staff do not necessarily 'sleep-in' in these houses and patients living in them frequently have leave to visit local towns, their family homes and often access occupational and educational placements in the community.

7.2 Participants

Participants were 40 adult male in-patients who met the following inclusion criteria: (a) between 18 and 60 years of age; (b) full scale IQ between 55 and 80; (c) detained under sections of the Mental Health Act 1983; (d) self-report total score $\geq$ 90 on the Novaco Anger Scale (NAS; Novaco, 1994); and (e) self-report total score $\geq$ 55 on the Provocation Inventory (PI; Novaco, 1994). In addition, on the basis of a semi-structured interview, participants had acknowledged having a problem, either currently or in the past, with controlling their temper that could adversely affect their future rehabilitation. Each patient's responsible medical officer (RMO) also supported their inclusion on the basis that the treatment would contribute significantly towards meeting identified clinical needs.

Table 10

Demographic, Cognitive Functioning and Personality Characteristics for Treatment Study Participants and Hospital Forensic Male Population

Participant Characteristics	Treatment Participants ($n = 40$)*	Hospital Population ($n = 129$)**
Age	29.5 (7.7)	33.2 (11.6)
Length of stay in years	4.1 (3.6)	3.7 (3.5)
WAIS-R Full Scale IQ	69.5 (5.2)	67.5 (8.0)
WORD Basic Reading Age in years	8.7 (3.1)	8.3 (3.7)
WORD Reading Comprehension Age in years	7.9 (1.9)	7.1 (3,1)
Nowicki-Strickland (ANSIE) Locus of Control	19.3 (4.2)	18.3 (4.1)
EPQ-R Short Form		
Psychotisism	3.4 (1.7)	3.5 (1.8)
Extraversion	8.7 (3.7)	7.8 (3.3)
Neurotisism	9.1 (3.5)	7.8 (4.0)
Lie Scale	5.0 (3.3)	6.1 (3.7)
Impulsiveness (IVE) Scale		
Impulsiveness	10.5 (3.2)	9.3 (3.4)
Venturesomeness	9.6 (4.4)	8.4 (4.2)
Empathy	11.7 (2.6)	10.9 (3.4)

Note. * For all characteristics Treatment Participants $N = 40$, except for WORD measures ($n = 37$), ANSIE ($n = 30$), EPQ scales ($n = 36$) and IVE scales ($n = 37$).
** For all characteristics Hospital Population $N = 129$, except for WAIS-R measures ($N = 121$), WORD measures ($n = 105$), ANSIE ($n = 99$), EPQ and IVE scales ($n = 107$). The number of respondents varies across measures as psychometric testing could not be done in some cases because participants declined, their mental state precluded testing, or they were discharged. All participants are males. All values given are means with standard deviations in parentheses.

Exclusion criteria were as follows: (a) presence of an active (uncontrolled) Axis I mental disorder – DSM-IV (American Psychiatric Association, 1994); (b)

presence of epilepsy that was judged to be intrinsic to the patient's anger/aggression problems; and (c) plans for discharge or transfer during the 6-month period from the beginning of treatment.

Table 10 provides demographic, cognitive functioning and personality characteristics data for the treatment study participants. Data are also given in this table for comparison purposes for the hospital forensic male population from which this sample are drawn. Table 11 provides data relating to anger, offence history and post-admission assault behaviour for both treatment study participants and the hospital forensic male population. It would not be appropriate to carry out tests for differences between these groups as treatment participants were drawn from the hospital population group. However, consideration of the standard deviations for the hospital forensic male population indicates that treatment participants did not differ markedly on any of the key characteristics relating to demography, cognitive functioning or personality assessments. Scrutiny of the STAXI, NAS and PI self-report anger measures reveals treatment participants' mean scores are consistently between a 0.5 and one standard deviation above the hospital forensic male population mean scores on these measures, and are markedly higher than scores obtained for patients without developmental disabilities in other forensic and psychiatric populations in the UK and US (O'Neill, 1995; Novaco, 1994; Novaco & Renwick, 2002). Also, treatment participants' mean score on the staff-rated WARS Anger Index was higher than that for the hospital male forensic population. These data are unsurprising in that treatment participants were selected out of the hospital population against treatment study inclusion criteria that specified high self-rated anger scale scores. They do, however, confirm that on average, based on responses to

Table 11

Anger Measures, Offence History and Assault Behaviour Characteristics for Treatment Study Participants and Hospital Forensic Male Population

Participant Characteristics	Treatment Participants ($n = 40$)*	Hospital Population ($N = 129$)**
STAXI		
State Anger	13.5 (5.5)	11.6 (3.7)
Trait Anger	23.1 (6.8)	18.8 (6.3)
Anger Expression	38.7 (7.1)	30.8 (11.2)
Anger In	20.1 (3.5)	17.8 (4.2)
Anger Out	19.8 (4.4)	16.8 (5.1)
Anger Control	17.2 (3.6)	19.8 (5.9)
NAS		
Cognitive	35.9 (3.8)	32.7 (5.2)
Arousal	34.4 (5.0)	29.4 (6.9)
Behavioural	34.5 (4.7)	30.3 (6.5)
Total	104.8 (10.6)	92.4 (16.6)
PI Total	72.4 (13.6)	62.9 (16.2)
WARS Anger Index	8.3 (7.1)	7.8 (6.9)
Previous Convictions		
for violence	13 (32%)	46 (36%)
for sexual offences	16 (40%)	55 (43%)
for fire-setting	5 (12%)	26 (20%)
for other offences	24 (60%)	68 (53%)
Number of Assaults since admission	1.8 (2.3)	1.8 (3.0)

Note. * For all characteristics Treatment Participants $N = 40$. ** For all characteristics Hospital Population $N = 129$, except for STAXI scales ($n = 112$), NAS scales ($n = 110$), PI ($n = 114$) and WARS Anger Index ($n = 127$). The number of respondents varies across measures as psychometric testing could not be done in some cases because participants declined, their mental state precluded testing, or they were discharged. All participants are males. With the exception of 'previous convictions', all values given are means with standard deviations in parentheses.

reliable self-report measures, the treatment participant group experienced clinically significant levels of anger. Despite these differences between the treatment participants and the hospital forensic male population, the mean number of assaults perpetrated by each group post-admission to hospital is the same and their conviction history profiles are similar; although it appears that treatment group participants are less likely to have convictions for fire-setting behaviour.

7.3 Research Design

As it was considered unethical to withhold a potentially effective treatment from those who might benefit from it, a delayed waiting-list control design was used in this study. This enabled treatment effectiveness to be evaluated by comparing the post-treatment scores on the outcome measures for the treatment group with the pre-treatment scores of the control group. Participants that met the inclusion criteria were allocated randomly to an 'anger treatment' condition (AT, $n = 20$), or to a 'routine care' condition (RC, $n = 20$) initially. Because of the small numbers involved, the groups were balanced to ensure that they matched on a number of key variables including age, intellectual functioning, length of stay and pre-treatment NAS and PI scores. Group sizes of $n = 20$ per condition were decided upon largely as a function of the resources available to conduct the study and to deliver the therapy within a reasonable time-scale to patients identified as needing treatment.

The maximum number of cases to whom the four therapists available could administer the individual anger treatment to at any one time was 10. It was estimated that the time required to deliver treatment to two cohorts of 10 patients in order to

produce an anger treatment (AT) condition of $N = 20$ would be approximately eight months. Given that the patients in the waiting list control (RC) condition had been assessed as having clinically significant anger problems, delaying treatment beyond this period was considered to be unjustified and probably unethical. Even with this design, the second cohort of 10 patients from the RC group would be waiting for a period of 12 months from the start of the study before beginning treatment. A diagrammatic research design and procedural plan for the anger treatment study showing how the AT group cohorts entered treatment is provided at Appendix 8. It can be seen from this plan that the design required that AT cohort 2 entered therapy as cohort 1 completed treatment which was four months after they began treatment.

Before combining the data from these treatment cohorts to form a combined AT condition for between group comparisons with the RC waiting-list control group, potential differences between AT cohorts 1 and 2 were examined. The key internal validity issue being whether cohorts 1 and 2 are sufficiently alike in composition and response to treatment to be constituted as a single group for comparison with routine care. Table 12 provides demographic, cognitive functioning and personality characteristics for the two treatment cohorts. Cohorts 1 and 2 do not differ significantly on any of these variables, with the exception of the EPQ Neurotisism scale. On this measure of 'emotionality' the mean score for cohort 1 was significantly higher than for cohort 2, $t(16) = 2.72$, $p < .05$. Table 13 gives the mean pre- and post-treatment scores and standard deviations for cohorts 1 and 2 on the self-rated anger instruments STAXI, NAS and PI. There were no statistically significant group differences in the above measures at pre-treatment, although PI Total was close at the $p < 0.05$ level ($t(16) = 2.09$) with cohort 2 having a higher

Table 12
Demographic, Cognitive Functioning and Personality Characteristics for Treatment Cohorts

Participant Characteristics	Cohort 1 ($n = 9$)*	Cohort 2 ($n = 9$)*
Age	29.0 (5.4)	28.8 (9.1)
Length of stay in years	4.9 (3.6)	4.1 (4.2)
WAIS-R Full Scale IQ	69.3 (3.7)	66.1 (5.2)
WORD Basic Reading Age in years	8.25 (2.7)	7.2 (1.5)
WORD Reading Comprehension Age in years	8.3 (2.0)	7.1 (1.3)
Nowicki-Strickland (ANSIE) Locus of Control	16.7 (5.1)	20.0 (5.2)
EPQ-R Short Form		
Psychotisism	3.3 (1.9)	3.4 (2.2)
Extraversion	10.1 (5.2)	8.2 (3.6)
Neurotisism	11.2 (3.4)	6.9 (4.0)
Lie Scale	5.1 (3.2)	5.7 (3.9)
Impulsiveness (IVE) Scale		
Impulsiveness	11.2 (3.5)	9.8 (2.9)
Venturesomeness	9.6 (5.1)	11.0 (4.0)
Empathy	12.0 (2.1)	10.1 (2.6)

Note. * For all characteristics $n = 9$ for both Cohorts 1 and 2 with the exception of the ANSIE where $n = 6$ and 7 respectively. All values given are means with standard deviations in parentheses.

mean score than cohort 1 on this measure of anger intensity and generality across a range of potentially provocative situations.

In considering the responses of the two treatment cohorts to anger treatment, mixed design analyses of variance (ANOVA) were conducted on the pre- and post-treatment means for self-report anger measures provided in Table 13. In each of these analyses the self-report anger measure was the dependent variable, time of

assessment a within-subjects factor (2 levels), and cohort a between-subjects factor. The results of these analyses show that cohorts 1 and 2 did not differ significantly from each other on any self-report measures of anger disposition and reactivity as a result of anger treatment over time ($F > 1$ for all five analyses).

To further explore the responses of the two treatment cohorts to anger treatment, therapists' evaluations of participants' progress through treatment, and participants' own evaluations of the value of the treatment were examined.

Table 13
Pre- and Post-treatment Self-Report Anger Measures for Treatment Cohort

	Cohort 1 ($n = 9$)		Cohort 2 ($n = 9$)		
Measure	Pre-treatment	Post-treatment	Pre-treatment	Post-treatment	ANOVA $F(1, 17)$
Spielberger					
State Anger	10.67 (1.00)	10.22 (0.67)	12.33 (6.63)	10.00 (0.00)	NS
Trait Anger	23.55 (6.35)	20.11 (4.3)	26.89 (7.41)	22.33 (6.10)	NS
Anger Expression	37.00 (11.78)	27.44 (12.38)	44.11 (11.42)	36.89 (10.54)	NS
NAS Total	101.44 (16.49)	89.56 (13.80)	104.78 (13.85)	98.00 (11.93)	NS
PI Total	65.56 (15.07)	50.78 (12.98)	79.67 (13.56)	71.22 (13.42)	NS

Note. ANOVA = mixed design analysis of variance. All values given are means with standard deviations in parentheses.

Analysis of the mean scores for the 18-item Patients Competency Checklist (PCC-PP) rated by therapists at completion of the six-session preparatory phase of treatment did not indicate any significant differences between the two treatment cohorts. The same analyses were carried out on the 31-item version Patients Competency Checklist (PCC-TP) completed by therapists at end of the twelve session treatment phase (that is, after 18 sessions). There were no significant

Table 14
Therapists' Ratings of Patient Competency at Completion of Preparatory Phase by Anger Treatment Cohorts

	Number of Patients Meeting Threshold Amount of Ratings as "Competent"	
Component Skills Threshold	Cohort 1 ($n = 9$)	Cohort 2 ($n = 9$)
≥ 10	3	3
≥ 7	5	5
≤ 2	1	2
	Number of Patients Meeting Threshold Amount of Ratings as "Not-competent"	
≥ 3	3	3
≥ 2	3	4
0	6	4

Note. Therapists rate patients component skills at the end of the Preparatory Phase on an 18-item version of the Patients Competency Checklist (PCC-TP) using 3-point scales where 1 = *'not competent'*, 2 = *'limited competence'* and 3 = *'competent'*.

differences between the treatment cohorts on their mean item ratings, except for item 31, "Ability to liaise appropriately with nursing staff to facilitate anger treatment", for which cohort 1 scored significantly higher ($M = 2.8$, $SD = .4$) than cohort 2 ($M = 2.0$, $SD = .7$), $t(16) = 2.80$, $p < .05$.

Table 14 shows the number of patients meeting threshold numbers of therapist ratings as "competent" or "not competent" on the component skills items of the PCC-PT. Cross tabulations according to group (cohort 1 vs. cohort 2) are not statistically significant for any of these thresholds relating to therapist-rated skills competence at the end of the preparatory phase of treatment. Table 15 shows the same type of data for the PCC-TP. Again cross tabulations for cohorts1 and 2 are not statistically significant for any of the thresholds relating to therapist-rated skills competence at the end of anger treatment after 18 sessions.

Patients' evaluations of how helpful different components of anger treatment have been are given in Table 16. The version of the Patient Evaluation of Anger Treatment completed at the end of the preparatory phase (PEAT-PP) has 11 items, each of which is rated on a 3-point scale. The post-treatment phase version of the questionnaire (PEAT-TP) has 18 items rated on the same 3-point scale. There was no significant difference between the total mean ratings for the 11-item PEAT-PP for cohort 1 ($M = 29.6$, $SD = 4.1$) and cohort 2 ($M = 28.2$, $SD = 3.4$), $t(16) = .19$. $p > .5$. Also, there were no significant differences between the two treatment cohorts for any of the 11 individual items. Similarly, for the 18-item PEAT-TP, there were no significant differences between the total mean ratings for cohort 1 ($M = 46.4$, $SD = 6.1$) and cohort 2 ($M = 43.9$, $SD = 8.2$), $t(16) = .75$, $p > .4$. None of the mean

Table 15

Therapists' Ratings of Patient Competency at Completion of Treatment Phase by Anger Treatment Cohorts

	Number of Patients Meeting Threshold Amount of Ratings as "Competent"	
Component Skills Threshold	Cohort 1 ($n = 9$)	Cohort 2 ($n = 9$)
≥ 17	4	3
≥ 10	7	5
≤ 3	0	2
	Number of Patients Meeting Threshold Amount of Ratings as "Not-competent"	
≥ 5	2	3
≥ 3	3	4
0	4	3

Note. Therapists rate patients component skills at the end of the Treatment Phase on 31-item version of the Patients Competency Checklist (PCC-TP) using 3-point scales where 1 = '*not competent*', 2 = '*limited competence*' and 3 = '*competent*'.

ratings for the 18 individual items of the PEAT-TP were significantly different between the two cohorts.

The extent to which participants experienced other changes during treatment could have an impact on the validity of combining data from the two treatment cohorts to form a combined anger treatment (AT) condition for group comparison purposes. Table 17 shows the responses made by staff concerning changes to patients' treatment programmes, support personnel (named nurses, RMOs, etc.) and personal/family relationships during the period of their anger treatment.

The ICT has 11 items each of which is rated according to whether there was major, minor or no changes in particular aspects of patients' lives. One patient from cohort 2 did not have the ICT completed because he was discharged immediately following completion of his anger treatment. Although equal variances can't be assumed, no significant differences were found between cohorts 1 and 2 on mean Change Index (CI) scores, t (8.34) = .62, $p > .5$. There were no significant

Table 16
Patients' Evaluations of Preparatory and Treatment Phases by Anger Treatment Cohorts

	Number of Responses (and %) in Categories of Helpfulness for Preparatory Phase	
Response Categories	Cohort 1 ($n = 9$)	Cohort 2 ($n = 9$)
Unhelpful	3 (3.0)	7 (7.1)
A little helpful	34 (34.3)	29 (29.3)
Very helpful	62 (62.6)	63 (63.6)
	Number of Responses (and %) in Categories of Helpfulness for Treatment Phase	
Unhelpful	10 (6.2)	22 (13.6)
A little helpful	48 (29.6)	47 (29.0)
Very helpful	104 (64.2)	93 (57.4)

Note. Patients rate each procedural component of the treatment at the end of the Preparatory Phase and the Treatment Phase using 11- and 18-item versions of the Patients Evaluation of Anger Treatment (PEAT) respectively. Each item, which is linked to a component of treatment, is rated on a 3-point scale where 1 = '*unhelpful*', 2 = '*a little helpful*' and 3 = '*very helpful*'.

differences between the treatment cohorts on their mean ratings for the 11 ICT items, although for item 10, "Changes to treatment plan", the difference between the mean score for cohort 1 (M =1.7, SD = .87) and cohort 2 (M =1.0, SD = .00) was very nearly significant, $t(8) = 2.3$, $p = .05$.

Having established in detail that cohorts 1 and 2 did not differ with regard to their composition, key demographic and clinical characteristics, responses to anger treatment, or other changes experienced during the treatment period, it was felt to be justified to combine their data to form a combined AT condition for group comparisons with the RC control condition.

Table 17
Staffs' Ratings of the Changes Experienced by Patients and Change Index Scores During the Period of Treatment by Treatment Cohorts

	Number of Responses (and %) in Categories for Change During Treatment	
Change Categories	Cohort 1 ($n = 9$)	Cohort 2 ($n = 8$)
None	75 (75.6)	70 (79.5)
Minor	11 (11.1)	13 (14.8)
Major	13 (13.1)	5 (5.7)
Change Index (CI)	15.22 (6.10)	13.87 (0.84)

Note. At the end of anger treatment staff rate each patient for the extent of change they have experienced during the period of treatment using an 11-item Index of Change during Treatment (ICT). The sum of these items produces a Change Index (CI) for each patient rated. CI values given are means with standard deviations in parentheses.

It was understood that taking in to account clinical, service and ethical issues, the treatment study plan for a sample N of 40 could have insufficient statistical power available to detect significant treatment effects. Cohen (1992) suggested that detection of large effect sizes at $d = .80$ for $\alpha = .05$ significance levels with a two-group ANOVA would require a sample size of $N = 26$ per group (cf. Cohen, 1992, p.158). However, conducting the present study with a smaller group size was thought to be justified because of several features of the study that were designated by Hallahan and Rosenthal (1996) to increase statistical power – principally the use of multiple repeated measures (what Hallahan & Rosenthal refer to as the "ultimate blocking variable", p. 495), focused contrasts (in the present study, linear trend analysis) and highly reliable measuring instruments. Additionally, it can be noted that the anger treatment study by Chemtob *et al.* (1997) that used similar treatment and evaluation methods was able to detect significant between group differences in anger with 8 subjects in the anger treatment group and 7 in the routine care group. Further, using sample sizes similar to that in the current study, and treatments based on Novaco's (1975) approach, Stermac (1986) and Rose *et al.* (2000) obtained significant anger treatment effects in studies involving forensic patients and people with learning disabilities living in the community respectively.

Another constraint on the study design was that the maximum period of follow-up that can be achieved for AT and RC group comparisons is four months. Given that the anger treatment being evaluated aims to develop new cognitive, arousal reduction and inter-personal skills, it may be that this time-frame would not be sufficient for these skills to be practised and developed *in vivo,* and thus not be detected as gains on follow-up outcome measures.

It must also be said that the randomised clinical trial standard of 'blind' assessment could not be achieved in this study. In this naturalistic service context, the assessors were unable to be blind to participants' treatment condition, because of the limited resources available. To attempt to compensate for this design constraint, assessments were conducted by research assistant psychologists rather than by the therapists themselves. Wherever practicable, the assessors evaluated participants in other parts of the service from those to which they were associated in terms of routine clinical duties. This meant that assessors did not, as a rule, evaluate patients with whom they had ongoing clinical links, relationships or detailed knowledge.

All patients, whether they were assigned to the AT or RC conditions, continued to receive treatment as usual. This could have included psychotropic medication, nurse-led counselling, behavioural management techniques, and psychological treatments including offence-related group therapy. Whilst from an experimental perspective these arrangements are far from ideal, in the context of a dynamic clinical setting in which patients with complex needs and the staff working with them face multiple challenges, it was thought the present design was the best that could be achieved and enhanced the ecological validity of the study.

7.4 Informed Consent

As the study was conducted with detained patients with intellectual disabilities within an experimental framework, obtaining informed consent from patients was vital. A cautious and conservative approach was adopted, therefore, that involved two stages of consent giving. Before commencing the preparatory phase of treatment patients were interviewed by the therapist and their named nurse together. They were

provided with written information concerning the nature of the research and treatment, confidentiality issues and their rights to decline involvement without prejudice to their future care and treatment. Each of these areas was discussed with the patient and they were told that if they consented to take part in the six session preparatory phase, they would be asked if they wanted to continue or opt out before the treatment phase began. The named nurse arranged to speak to the patient again within 36 hours, answer any questions they might have and seek their written consent. Written consent was sought again following completion of the preparatory phase as, given the educational aspect of this work, it was felt that at this point any consent given would be better informed. Patients retained their own copies of signed consent forms and information leaflets for reference. Copies of the two treatment/research consent forms used, along with the information leaflet provided to patients can be found at Appendix 9.

It was necessary also to obtain consent from patients waiting for treatment in cohort 2 of the AT condition and RC group members as the study design required these participants to undergo additional anger assessments beyond screening assessments for group comparison purposes prior to them entering treatment. Information concerning the anger research, assessments and confidentiality issues and their rights to decline involvement without prejudice to their future care and treatment was given to patients and discussed with them by a research assistant psychologist and a qualified member of nursing staff together. Written information was also provided to patients concerning these issues before written consent to be part of the waiting-list condition for the study was sought. Patients retained their own copies of signed consent forms and information leaflets for reference. Copies of the

assessment/research consent form and patient information leaflet for patients waiting for treatment are at Appendix 10.

7.5 Anger Treatment Protocol

7.5.1 Therapists and Treatment Integrity

The treatment was provided by four therapists, all of whom were trained and highly experienced clinical and forensic psychologists. To facilitate the integrity of the treatment protocol the therapists met weekly for peer supervision sessions.

During these sessions the delivery of the protocol and any deviation from it was discussed, agreed and noted. At the end of each treatment session therapists were also required to complete a report on the session, including an account of what content from the treatment manual had been covered in the session. This report was then filed with the treatment study research assistant who collated therapist and patient session ratings. The principal investigator and current author carried out regular random reviews of therapists' anger treatment files, including session reports and clinical notes, to check on treatment adherence and therapist competence throughout the study period.

At the end of both the preparatory and treatment phases of the intervention, the therapists and the patients completed competency checklist and treatment evaluation forms respectively. These forms included ratings of patients' understanding, skills and benefits derived from all components of the treatment as set out in the manual. These scales were computed for all patients as additional treatment adherence checks.

The author of the original treatment protocol (Professor Raymond Novaco) made quarterly on-site visits to provide training through workshops and seminars, clinical supervision and support to the therapists and to monitor the procedural progress of the treatment project. Whilst these procedures fall short of what might be considered to be a systematic quality assurance system for ensuring treatment integrity (Nezu, 2001), they represented a compromise in attempting to attenuate this internal validity issue. An 'ideal' in monitoring manual adherence and facilitating therapists' supervision, would have involved video or audiotape recording of treatment sessions a random sample of which would have been reviewed independently. This was not viable given the resources available for this study and the difficulty with such procedures involving detained patients in secure facilities, subject to the mental health act and with variable ability to understand and give informed consent.

7.5.2 Anger Treatment Protocol Development and Delivery

The treatment was guided by a new manual, designed specifically for use with people with mild to moderate intellectual disabilities (Taylor & Novaco, 1999). This new treatment was based on the cognitive-behavioural approach developed by Novaco (1975, 1993). Treatment was delivered to individual patients by the same therapist over 18 sessions in a designated therapy room close to or on the patient's residential unit. In general, actual treatment sessions involved the therapist and patient only. An 18-session treatment package was decided upon for a number of reasons. This approximated the average amount of therapy delivered to participants in the published anger treatment studies involving people with developmental disability (see Table 3). Eighteen one-hour sessions appeared to be about the right

amount of time required to deliver the revised and modified content of Novaco's (1993) most recent anger treatment manual. Finally, this amount of therapy, delivered according to the schedule set out below, had worked well and had been positively received by a small number of patients in a pre-study pilot.

Due to the security status of some patients, in a few cases a member of the ward nursing staff escorted the patient to and from the session and sat outside the therapy room, out of line-sight of the patient, during the session. In most cases the patient was 'collected' from and returned to their residential unit by the therapist before and following their treatment session.

Whenever possible, treatment was delivered at the rate of two sessions each week, and there was a minimum of one session per week. Previous experience of using psychotherapeutic approaches with this patient group suggested that a more intensive treatment schedule would help to overcome fluctuations in individuals' motivation to change by maintaining therapeutic momentum and preventing drift. In addition, it was estimated that a higher therapeutic dosage would ameliorate some of the anticipated difficulties with assimilation and recall of information exchanged during the treatment sessions.

Although the treatment sessions routinely involved the therapist and patient only, the patient's named nurse or a deputy was involved whenever possible at the end of each session to discuss the patient's progress and (home)work to be completed between sessions. For example, from the second session onwards the patients were encouraged to complete daily anger logs to record the nature, frequency, duration and intensity of any angry incidents that occurred. These anger logs were completed, whenever possible, with assistance and support from the patient's named nurse or

keyworkers in order to promote a collaborative approach to treatment through open discussion, shared problem-solving and mutual reflection concerning anger-provoking incidents.

7.5.3 Content of Anger Treatment Protocol

The personal histories of many of the participants in this study involved physical, emotional and sexual abuse, as well as repeated failures across health and social care settings, resulting in perceived rejection by important others and loss of close relationships. Thus, engagement in trusting therapeutic relationships is difficult for this client group. For these reasons, a broadly psycho-educational 'preparatory phase' of anger treatment was offered. The need for an introductory phase prior to treatment beginning in earnest for this client group, in order to develop the skills and confidence required to successfully engage in and benefit from anger treatment, and to judge whether the individual can cope with the treatment, was discussed by Black, Cullen and Novaco (1997). A similar preparatory phase of treatment was implemented with a good measure of success by Renwick *et al.* (1997) in the treatment of chronic anger problems in four mentally disordered offenders in a high security hospital setting in Scotland.

7.5.3.1 Preparatory Phase

In this new treatment manual the preparatory phase comprised six sessions aimed at desensitising patients to anxieties that they might have about embarking on intensive psychological therapy. The goals of this phase of treatment were: (a) to give the patient information on the nature and purpose of anger treatment; (b) to

encourage motivation to change current unhelpful anger coping responses by identifying the costs of this behaviour; (c) to develop some basic skills needed for successful treatment including self-disclosure, emotional awareness, self-monitoring and recording, and basic relaxation techniques; (d) to foster trust and confidence in the therapist and the therapeutic process; and (e) to emphasise the collaborative nature of the treatment that is aimed primarily at helping him achieve better self-control.

This preparatory phase had the added benefit of improving patients' understanding of the treatment process so that they could give more informed consent before moving in to the next phase of treatment.

7.5.3.2 Treatment Phase

On successful completion of the preparatory phase, and if they renewed their consent to treatment, patients proceeded to the 12-session 'treatment phase', the core components of which are cognitive re-structuring, arousal reduction and behavioural skills training. These map onto the key domains of the cognitive model of anger proposed by Novaco (1994) and are achieved by building on the therapeutic relationship and skills developed during the preparatory phase. The techniques and procedures utilised in the treatment phase include: (a) more advanced self-monitoring and recording of anger frequency, intensity, duration and triggers; (b) a detailed analysis and formulation of the individual's anger problems; (c) construction of a personal anger provocation hierarchy from anger log records and recollection of earlier angry situations; (d) cognitive re-structuring by shifting attentional focus, modifying appraisals and challenging expectations; (e) developing arousal reduction

techniques including abbreviated progressive muscular relaxation, breathing-focused relaxation and cognitive distraction using calming imagery; (f) training problem-solving approaches through effective communication using role-play rehearsal; (g) development of personalised self-instructions to prompt coping; and (h) use of the stress inoculation approach to practice effective coping whilst visualising and role-playing increasingly anger-provoking scenes from the anger hierarchies.

Details of the content and aims of the 18 sessions of anger treatment making up this protocol are given at Appendix 11 "Content and Aims of Anger Treatment Sessions". As can be seen from Appendix 11, the key components of the treatment including cognitive re-structuring, arousal reduction and behavioural skills training, build during therapy in a logical step-wise manner through the classical cognitive preparation, skills acquisition and skills rehearsal/practice stages so that towards the end of the 18 sessions they are incorporated into practice *in vitro*, and if possible *in vivo*, as a sequential but integrated and comprehensive approach to coping effectively with anger problems.

Given that a stated aim of this study is to evaluate the effectiveness of a treatment that has cognitive re-structuring its core, and taking into account the intellectual limitations of participants, some mention of how this aspect of treatment is covered is justified. The putative role of cognitions in the experience of anger is given attention right from the start in Session 1 as part of the presentation of a simplified model of "How Anger Works". How cognitions are associated with emotion and behaviour is addressed in some detail in Session 3. A detailed exercise considering how thinking differently about events can affect our feelings and reactions is worked through using an example from an anger log completed by the

patient as homework from Session 2. The work on cognitions is reviewed in the final preparatory phase Session 6. The role of cognitions in anger is re-introduced during the first anger treatment phase Session 7 as a review of the How Anger Works model. 'Thought catching' as a means of increasing awareness of self-talk is a component part of Session 8 and this is linked to the 'internal processes' aspect of an analysis/formulation of the individual patients anger problems. Thought catching is integrated in to anger logs completed as homework at this point. Work on thought catching is developed in Session 9 and is used as the basis of a formal cognitive re-structuring exercise in Session 10 using material collected by patients in their anger logs. These cognitive re-structuring exercises are continued as a formal part of each session from this point on and are developed to incorporate training on cognitive awareness and skills including attentional focus and appraisal processes, perspective-taking and rumination. As this work progresses through Sessions 10 to 18, thinking about situations differently is integrated in to the behavioural skills repertoire through the stress inoculation imaginal practice procedure, role-play in sessions and encouragement to practise these approaches in 'real-life' situations between sessions and report back on their utility. In these ways work on the role of cognitions and cognitive processes in anger, and the training of cognitive re-structuring techniques to alter unhelpful cognitions associated with anger problems is infused in this treatment approach and has equal status with and is given the same amount of attention as arousal reduction and behavioural skills training procedures.

7.5.3.3 Accommodating Individual Differences

The manualised treatment is intended to provide a framework within which the therapists and patients can flexibly apply the therapeutic techniques described to meet the needs of individual patients. However, the treatment by nature is collaborative and interactive, and it should, therefore, be applied in a manner that reflects these dynamics. There will be variations in the focus, pace and emphasis of the therapy delivered by different therapists working with different patients depending on the analysis and formulation of their anger problems.

7.6 Measures

7.6.1 Anger Outcome Measures

Treatment effects were evaluated using three self-report anger measures: 1) the STAXI (Spielberger, 1996), 2) the NAS (Novaco, 1994) and 3) the PI (Novaco, 1975,1988), along with the staff-rated WARS Anger Index (Novaco, 1994). These measures and their psychometric properties are described in detail in the assessment study method Chapter 5, sub-section 5.4 'Assessment Measures'. The procedure for the administration of these measures was exactly as set out in the method for the assessment study, sub-section 5.3. (Copies of these measures are provided in Appendices 1, 2, 3 & 4).

7.6.2 Clinicians Rating Scales (CRS)

In addition to these measures, patients in the AT group were assessed by a named nurse at the end of treatment, and then again after one month using a Clinicians Rating Scale (CRS). This is a modification by Renwick *et al.* (1997) of a

measure developed by Black (1994) designed to assess characteristics of social behaviour salient to anger coping skills. The CRS is made up of six attribute scales: 'tolerance for frustration', 'interpersonal sensitivity', 'sociability', 'irritability', 'tenseness', and 'defensiveness'. These attributes are rated on five-point scales from 1 (much worse) to 5 (much better) regarding changes over the past 12 months. A copy of this scale can be found at Appendix 12.

7.6.3 Patient Competency Checklist (PCC)

7.6.3.1 Patient Competency Checklist – Preparatory Phase (PCC-PP)

This checklist was developed for this study to enable therapists to rate participants' competencies on a range of component skills covered during the preparatory phase of treatment. Eighteen ratings are made using three-point scales to indicate if the participant is 'not competent', has 'limited competence', or is 'competent' in relation to particular component skills. The skills assessed in this phase of treatment include specific components covered in particular sessions such as "Understands the importance of self-monitoring of angry feelings" (session 2), "Is aware of the physiological/physical reaction to stress" (session 4), "Is able to weight the costs and benefits of and aggression" (session 5). In addition more general skills and attributes are rated including, for example, "Ability to communicate appropriately in the therapy context" and "Demonstrates motivation and enthusiasm for therapy". The therapist completes this checklist following completion of the preparatory phase and, whenever possible, in collaboration with the participant's named nurse or a deputy. This enables information from outside of the treatment sessions to inform the judgements on which the ratings are based. In addition it

provides an opportunity for the direct care staff to have structured feedback on the participant's progress in therapy. A copy of this checklist can be found in Appendix 13.

7.6.3.2 Patient Competency Checklist – Treatment Phase (PCC-TP)

This newly developed checklist is similar in format to the PCC-PP and a copy is located in Appendix 14. The same three-point rating scale is used to evaluate the level of competence participants' are judged to have acquired in relation to a range of skills at the end of anger treatment. As the treatment phase is longer and incorporates work on additional skills, the PCC-TP has 31 items compared with eighteen in the preparatory phase version. The component skills covered in particular sessions are rated including "Is able to understand the dimensions of own anger problem" (sessions 7 and 8), "Is able to understand the concept of perspective-taking" (session 11), "Is able to construct a realistic personal script for prompting anger control" (sessions 17 and 18). Further, more general skills and characteristics are evaluated. These include the ability to benefit from APR (relaxation) exercises, the ability to modify appraisals through perspective-taking and the ability to role-play successful anger coping skills. The therapist, in collaboration completes the checklist with the named nurse, following completion of the 18-session anger treatment.

7.6.4 Patients' Evaluation of Anger Treatment (PEAT)

7.6.4.1 Patients' Evaluation of Anger Treatment–Preparatory Phase (PEAT-PP)

This is a questionnaire developed specifically for use within the anger treatment programme. It is designed to gauge participants' satisfaction with the preparatory

phase of treatment, and to obtain their ratings on how helpful different components of the programme have been to them and any therapeutic benefit derived from this stage of treatment. Eleven items (numbers 6 to 16) are rated by participants using a three-point scale to indicate if, for example, "Finding out how anger works" (item 7) has been unhelpful, a little helpful or very helpful. The questionnaire is administered to participants as a structured interview by therapists during session 6 of the preparatory phase as part of the review of this stage of treatment. A copy of this questionnaire is located at Appendix 15.

7.6.4.2 Patients' Evaluation of Anger Treatment–Treatment Phase (PEAT-TP)

This questionnaire was developed for the same purposes as the PEAT-PP and is administered at the end of the treatment phase. As the treatment phase is longer and adds to the treatment components included in the preparatory phase, this questionnaire contains eighteen items (numbers 6 through 23) relating to how helpful participants found the different elements of treatment. The same three-point rating scale is used as for the PEAT-PP and it is administered as a structured interview during session 18 as part of an overall review of anger treatment. A copy of this questionnaire can be found at Appendix 16.

7.6.5 Index of Change during Treatment (ICT)

On completion of anger treatment, each participant's named nurse, or a deputy who knows the person well, is asked to complete this eleven-item questionnaire concerning changes to the individual's treatment, key personnel supporting them and personal/family relationships. A copy of this index, developed specifically for this

study, is located at Appendix 17. Sample items include "Changes to (psychotropic) medication", "Change of responsible medical officer", and "Changes to treatment plan". Each item is rated on a three-point scale where 'none' = 1, 'minor change' = 2 and 'major change' = 3. Staff are requested to specify details of any changes recorded in connection with particular items. The ratings on the eleven items yield a Change Index (CI) that has a minimum score of 11 and a maximum of 33.

7.6.6 Staff Questionnaire (SQ)

In order to investigate in a preliminary manner the views of direct care staff regarding the impact of the anger treatment on patients as a whole, and their own level of involvement in and reactions to the treatment, the Staff Questionnaire (SQ) was developed. Named nurses for patients who had participated in anger treatment were asked to complete this questionnaire after cohort 2 had completed their treatment. A copy of the SQ is provided at Appendix 18. The SQ is made-up of five rating scales that are scored by staff according to their personal views of the anger treatment, its delivery and its impact on index patients, other patients not receiving the treatment and their own practice. For example, item 1 asks "On the whole would you say that the patients who have had anger treatment have benefited from it?". Staff respond using a five-point scale where 'not at all' = 1 and 'a great deal' = 5. There are seven supplementary questions prompting descriptive answers linked to the rating scale items. So question 2 is "In what ways do you think patients have benefited from having anger treatment?". In addition some information regarding staffs' designation, experience and current work is requested.

CHAPTER 8: RESULTS II – TREATMENT STUDY

8.1 Treatment Study Sample Characteristics

Of the 40 patients involved in the study, two AT group participants did not complete treatment. These patients are not included in the comparative analyses of this study. (Details of the characteristics of the treatment dropouts are given in section 8.2 below.)

8.1.1 Demographic, Cognitive Functioning and Personality Characteristics of Treatment Groups

Table 18 provides demographic, cognitive functioning and personality characteristics data for the 38 men that constitute the treatment study sample, along with data for the two participants that dropped out of treatment. Using *t* test comparisons, the anger treatment (AT) and routine care (RC) control groups do not differ significantly on any of these key variables, with the exception of WAIS-R Full Scale IQ. On this measure of global intellectual functioning the mean for the AT group was significantly lower than for the RC group, $t(36) = 2.16$, $p < .05$. In addition, the AT group's mean WORD basic reading age score was lower than that for the RC group, and this difference approached statistical significance, $t(33) = 1.88$, $p = .07$.

8.1.2 Offence History, Legal & Security Status , Assault Behaviour and Diagnostic Characteristics of Treatment Groups

Table 19 gives data concerning legal and security status, convictions histories, assault behaviour and psychiatric diagnosis separately for the AT and RC groups,

Table 18
Demographic, Cognitive Functioning and Personality Characteristics for Treatment Groups and Drop-outs

Participant Characteristics	Anger Treatment (AT, n=18)*	Routine Care (RC, n=20)**	Treatment Drop-outs (TD, n=2)***
Age	28.9 (7.3)	29.9 (8.6)	30.5 (5.0)
Length of stay in hospital in years	4.5 (3.8)	4.6 (3.7)	5.0 (2.8)
WAIS-R Full Scale IQ	67.7 (4.7)	70.7 (4.0)	72.5 (2.8)
WORD Basic Reading Age in years	7.7 (2.2)	9.5 (3.1)	11.9 (7.3)
WORD Reading Comprehension Age	7.7 (1.7)	7.9 (2.7)	9.2 (0.7)
Nowicki-Strickland (ANSIE) Locus of Control	18.5 (5.2)	20.1 (3.3)	18.5 (2.1)
EPQ-R Short Form			
Psychotisism	3.4 (2.0)	3.4 (1.6)	3.5 (0.8)
Extraversion	9.2 (4.5)	8.2 (2.5)	8.0 (5.7)
Neurotisism	9.1 (4.2)	9.0 (2.8)	10.0 (2.8)
Lie Scale	5.4 (3.5)	4.8 (3.1)	3.5 (3.5)
Impulsiveness (IVE) Scale			
Impulsiveness	10.5 (3.2)	10.6 (3.4)	9.0 (0.0)
Venturesomeness	10.3 (4.5)	9.1 (4.2)	8.5 (6.4)
Empathy	11.1 (2.5)	12.3 (2.7)	12.5 (2.1)

Note. * For all characteristics AT Group n = 18, except for ANSIE (n = 13). **For the RC group n = 20 for all characteristics, except ANSIE (n = 15), EPQ scales (n = 16) and the IVE and WORD measures (n = 17). ***For the TD group n = 2 on all characteristics. All participants are males. All values given are means with standard deviations in parentheses.

plus the treatment dropouts (TD). The AT and RC groups can be seen to be highly comparable on these background variables. Chi square analyses according to treatment condition (AT vs. RC) are not statistically significant for any of these variables. All patients in the treatment study sample (n = 38) were subject to sections

of the MHA 1983 and the majority were detained under criminal sections of the act (s. 37 or s.37/41) indicating that they had been processed by the criminal justice system prior to admission. In terms of the level of security at the time of treatment, the participants were distributed throughout the hospital forensic service units, with the majority residing in rehabilitation facilities that make up the largest sector of the service. Twelve (32%) of the sample had convictions for violence and for seven of these patients this was their index offence. However, a further 17 (45%) of the sample had no convictions, but did have documented histories of violent behaviour. Fifteen participants (39%) had convictions for sexual offences, and five (13%) had been convicted for fire-setting offences. A further 17 (45%) had documented histories of sexually aggressive and fire-setting behaviours, but these had not been processed by the criminal justice system. Twenty-two of the 38 patients in this sample (58%) also had convictions for a range of other offences, for example burglary, car theft, fraud, breach of the peace. Only seven participants did not have any criminal convictions recorded, but in each case they had documented concerns regarding violent behaviour, sexual aggression, fire-setting behaviour, or a combination of these.

Following admission 23 (60%) of the treatment study sample (n = 38) had been physically assaultive towards either staff or other patients, and 17 (74%) of these 23 'assaultive' patients (or 45% of the total sample) had carried out physical assaults on two or more occasions post-admission. There was no significant difference between the AT and RC groups concerning the mean number of assaults carried out post-admission.

Table 19

Offence History, Rehabilitation & Legal Status, Assault Behaviour and Diagnostic Characteristics for Treatment Groups and Drop-outs

Participant Characteristics	Anger Treatment (AT, $n = 18$)	Routine Care (RC, $n = 20$)	Treatment Drop-outs (TD, $n = 2$)
Mental Health Act 1983			
treatment section (s.3)	5	4	0
hospital order (s.37)	7	8	0
hospital order with restriction (s.37/41)	6	5	2
other sections (e.g. s. 47, 49, 35)	0	3	0
Ward security level			
medium security	4	7	1
acute low security	3	3	0
rehabilitation	11	10	1
Previous convictions			
for violence	6	6	0
for sexual offences	7	8	1
for fire-setting	3	7	1
for other offences	11	11	2
Mean number of Assaults since admission	2.3 (2.8)	1.5 (1.8)	0.5 (0.7)
Psychiatric Diagnosis			
major affective disorder	5	2	1
psychosis	2	2	0
personality disorder	3	5	0
other diagnosis (e.g. Asperger Synd.)	2	6	0
no psychiatric diagnosis	6	5	1

Note. All participants are males.

In addition to developmental disability (learning disability or 'mental impairment' as defined in the MHA 1983), twenty-seven out of 38 (71%) were noted in hospital records as having co-morbidity for conditions including affective,

personality and psychotic disorders. These 'dual diagnoses' were distributed reasonably evenly across the AT and RC groups.

8.1.3 Treatment Groups Pre-Treatment Anger Scores

The treatment study sample (n = 38) pre-treatment mean scores for STAXI State Anger (11.4, SD = 3.7), Trait Anger (25.8, SD = 6.7) and Anger Expression (40.1, SD = 11.3), and NAS Total (104.7, SD = 14.3) and PI Total (74.6, SD = 15.6) self-report anger scales are, with the exception of State Anger, between 0.5 and one standard deviation above the forensic male population means (which included the treatment study sample) on these measures (see Table 11 for hospital forensic male population anger scales values). This indicates that the treatment study sample was experiencing clinically significant anger problems at the point of treatment beginning. Using t tests no significant differences between AT and RC groups on any of the summary anger indices, their sub-scales or the staff-rated WARS Anger Index. AT and RC group means (and standard deviations) for these anger scales are given in Table 20.

8.2 Treatment Dropouts

The two patients who dropped out of treatment gave reasons for discontinuing that were apparently unrelated to the treatment itself. In both cases they were, according to both the patients and their therapists' ratings, progressing well with the treatment. Both had successfully completed the preparatory phase of treatment and had given consent to continue into the treatment phase. The therapists for these patients believed that they had developed good, collaborative therapeutic working

Table 20
Pre-Treatment Anger Measures for Treatment Groups and Drop-outs

Anger Measures	Anger Treatment (AT, $n = 18$)	Routine Care (RC, $n = 20$)	Treatment Drop-outs (TD, $n = 2$)
STAXI			
State Anger	11.5 (4.7)	11.3 (2.6)	11.0 (1.4)
Trait Anger	25.2 (6.9)	26.3 (6.7)	20.0 (1.4)
Anger Expression	40.6 (11.8)	39.6 (11.1)	32.0 (1.4)
Anger In	22.1 (4.1)	19.8 (3.8)	16.5 (2.1)
Anger Out	19.7 (6.3)	21.5 (6.0)	15.5 (3.5)
Anger Control	17.2 (5.2)	17.7 (5.8)	16.0 (0.0)
NAS			
Cognitive	35.8 (4.5)	35.1 (5.1)	32.5 (0.7)
Arousal	33.7 (6.3)	35.8 (6.6)	30.5 (2.1)
Behavioural	33.6 (6.0)	35.1 (6.0)	29.0 (4.2)
NAS Total	103.1 (14.9)	106.1 (14.0)	92.0 (7.1)
PI			
Disrespectful Treatment	15.2 (4.0)	15.7 (4.0)	13.0 (0.0)
Unfairness/Injustice	16.4 (2.4)	16.1 (2.6)	16.0 (2.8)
Frustration/Interruption	13.6 (4.0)	15.2 (3.6)	13.0 (1.4)
Annoying Traits	13.7 (4.1)	14.7 (3.7)	16.0 (2.8)
Irritations	13.7 (4.3)	14.6 (3.7)	14.0 (0.0)
PI Total	72.6 (15.7)	76.4 (15.7)	72.0 (4.2)
WARS Anger Index	5.3 (6.4)	8.0 (6.5)	6.0 (0.7)

Note. All participants are males. Values given are means with standard deviations in parentheses.

relationships in both cases. In fact, at the point of exiting treatment, both patients apologised to their therapists directly for quitting and were eager to explain that their decisions had nothing to do with the treatment itself, their progress within it or their relationships with their therapists. In each case the stated reason for dropping out of treatment was related to stalled plans for their transfer or rehabilitation. Because of these perceived difficulties (injustices) with the 'system' holding them back in some

way, both patients had decided not to comply with any of their treatment, training, occupational or educational programmes. From their perspectives, their anger treatment was just another component of their care plans from which they were disengaging at that point.

In considering their characteristics, data provided in Tables 18 through 20 indicate that, compared with the rest of the treatment study sample, the two treatment dropouts were a little more able in terms of their cognitive functioning scores and scored slightly lower on the EPQ Extraversion and IVE Impulsiveness and Venturesomeness scales. Neither patient had previous convictions for violent offences, and only one of the two had carried a single assault since his admission to hospital. On the self-rated STAXI and NAS anger disposition scales the treatment dropouts scored consistently lower than the treatment study sample, although their scores on the PI anger reactivity and the staff-rated WARS Anger Index for the previous seven days were similar to the study sample.

8.3 Self-Rated Anger Disposition, Intensity and Control: AT vs. RC Group Comparisons

Although 18 participants completed treatment as part of the Anger Treatment (AT) group, two of these patients were discharged following completion of their treatment and were lost to follow-up. Therefore analyses of self-rated anger measures that involve follow-up data are based on 36 treatment study participants (AT group n = 16, RC group n = 20).

Treatment effects were evaluated using repeated measures mixed design analyses of co-variance (ANCOVA) with anger scores as the dependent variables, time of assessment (screen, pre- and post-treatment, and 4-month follow-up) as the

within-subjects factor and treatment condition (AT vs. RC) as the between-subjects factor. Treatment effects were specifically evaluated by testing for between-group differences in linear trend, as progressive decreases in anger were expected across the assessment interval. In all of these analyses full scale WAIS-R IQ was included as a co-variate as it was the only variable to differ significantly in the pre-treatment comparisons of AT and RC groups (see section 8.1.1). Reading age was very close to differing significantly between the groups pre-treatment ($p = .07$), however it was not included as a co-variate because of co-linearity with IQ.

The key tests of treatment effects in these analyses are 'focused' rather than 'omnibus' statistics. That is, the repeated measures ANCOVAs address specific questions about participants' improvements on dependent variables over time by testing linear contrasts. Employment of such focused tests of significance increases the statistical power available to reduce the probability of making type II errors (overlooking or discounting an effect that is really present by incorrectly accepting the null hypothesis). A further advantage of this approach to the analysis of treatment effects is that it is possible to calculate the effect sizes for dependent variables. It has been argued that it is both desirable and helpful to report effect sizes along with significance (p) statistics in order to demonstrate the practical or clinical significance of an intervention (Hallahan & Rosenthal, 1996; Jacobson & Truax, 1991; Rosnow & Rosenthal, 1988). Therefore, the effect size measure r (Rosnow & Rosenthal, 1988) is given for the ANCOVAs that explore focused contrasts and either reach or approach statistical significance at the $p = .05$ level. The Rosnow & Rosenthal calculation for effect size is r = square root of F / (F + df error). Cohen (1992)

suggests that an r of .1 should be considered a "small" effect, an r of .3 be considered a "medium" effect and an r of .5 be considered a "large" effect (p. 157).

8.3.1 Novaco Anger Scale (NAS) Measures

Table 21 gives NAS means for AT and RC groups at four assessment points; screen, pre- and post-treatment and 4-month follow-up. There were no statistically significant group differences on these anger disposition measures at pre-treatment (all t values < 1). Mixed design ANCOVAs were conducted on the NAS Total and Cognitive, Arousal and Behavioural sub-scales. An analysis of the between group differences in linear trend showed that the AT group differed significantly from the RC group on NAS Total scores, $F(1,33) = 4.74, p < .05, r = .35$. The AT group had a significantly lower score on the NAS Total following treatment, and this treatment gain was maintained at follow-up (see Figure 1).

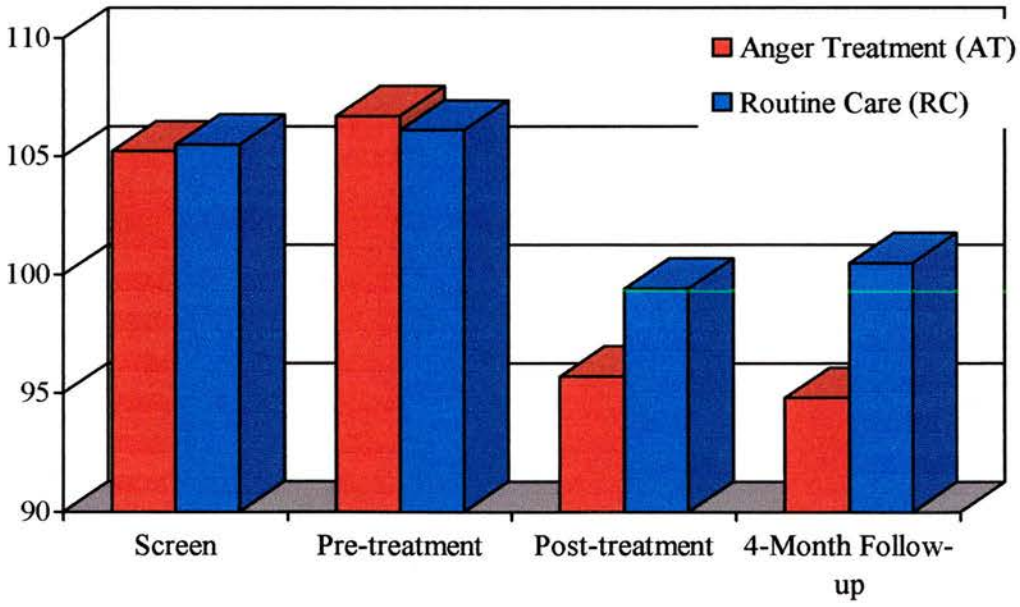

Figure 1. Mean NAS Total scores for AT ($n = 16$) and RC ($n = 20$) groups over time.

Table 21

Screen, Pre and Post-treatment, and Follow-up Novaco Anger Scale Measures for Anger Treatment and Routine Care Groups

Measure	AT Group ($n = 16$)				RC Group ($n = 20$)			
	Screen	Pre-treatment	Post-treatment	4-month follow-up	Screen	Pre-treatment	Post-treatment	4-month follow-up
Novaco Anger Scale (NAS)								
Cognitive	36.69 (3.63)	36.06 (4.27)	33.25 (3.79)	33.06 (3.92)	35.75 (3.89)	36.06 (4.27)	33.35 (4.93)	34.05 (3.17)
Arousal	35.37 (4.60)	34.06 (5.25)	31.56 (5.25)	31.12 (5.39)	34.35 (4.60)	35.85 (6.61)	33.30 (5.36)	33.60 (4.97)
Behavioural	34.69 (4.47)	34.25 5.26	30.87 (5.28)	30.26 (5.70)	35.35 (4.58)	35.15 (6.01)	32.75 (6.08)	32.90 (5.25)
NAS Total	106.75 (10.43)	104.37 (12.33)	95.69 (12.69)	94.81 (13.15)	105.45 (10.72)	106.10 (14.03)	99.40 (14.24)	100.55 (11.96)

Note. All values given are means with standard deviations in parentheses.

The NAS Total treatment effect appears to be accounted for, in large part, by the NAS Arousal sub-scale score, for which the group differences in linear trend were significant, $F(1,33) = 6.72$, $p < .05$, $r = .41$, whereas the effects for the Cognitive and Behavioural sub-scales were not, although they were in the expected direction. The AT group's post-treatment scores on NAS Cognitive and Behavioural sub-scales are significantly lower than their corresponding pre-treatment scores and these significant reductions were maintained at follow-up ($F(1, 15) = 8.48$, $p < .02$, $r = .60$ and $F(1,15) = 6.16$, $p < .03$, $r = .54$ respectively).

8.3.2 Provocation Inventory (PI) Measures

There were no statistically significant group differences on any of the PI measures at pre-treatment (see Table 22). Only one of the six t values was greater than 1. The test of between group differences in linear trend for the PI Total scores over time was not significant, although a significant between groups main effect was detected, $F(1, 33) = 4.34$, $p < .05$, $r = .34$. These analyses indicate that whilst overall the AT and RC groups differ significantly on PI Total across the four data points, the AT group did not improve significantly over time compared with the RC control group (see Figure 2). However, there were significant between group differences in the test of linear trend for the Unfairness/Injustice sub-scale, $F(1, 33) = 9.88$, $p < .005$, $r = .48$.

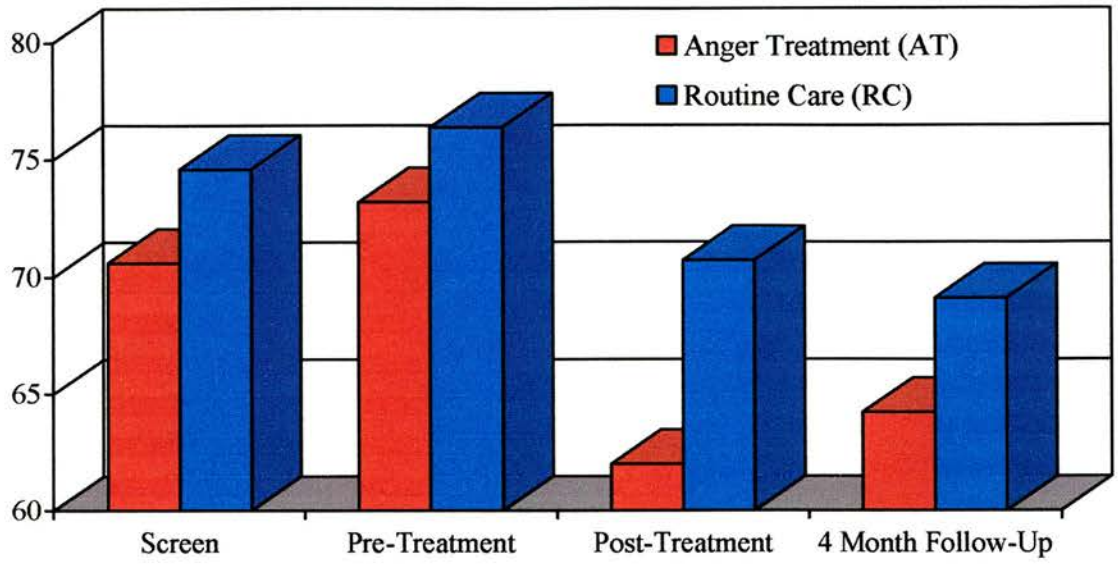

Figure 2. Mean PI Total scores for AT ($n = 16$) and RC ($n = 20$) groups over time.

Table 22 shows that all the PI sub-scale means for both AT and RC groups scores fall during the period that the AT group received treatment. Paired sample *T*-tests indicate that for the AT group pre-post treatment decreases are statistically significant for all PI sub-scales except Annoying Traits, (t values ranging from 2.31 to 2.61, d.f. = 15, $p < .05$ for the four remaining sub-scales). For the RC group two of the PI sub-scale scores decreased significantly during the anger treatment period, Frustration/Interruption ($t(19) = 2.32, p < .05$) and Annoying Traits ($t(19) = 2.37, p < .05$).

Table 22

Screen, Pre and Post-treatment, and Follow-up Provocation Inventory Measures for Anger Treatment and Routine Care Groups

Measure	AT Group (n = 16)				RC Group (n = 20)			
	Screen	Pre-treatment	Post-treatment	4-month follow-up	Screen	Pre-treatment	Post-treatment	4-month follow-up
Provocation Inventory (PI)								
Disrespectful Treatment	14.56 (2.97)	15.37 93.67)	13.44 (2.99)	13.50 (4.00)	15.05 (3.41)	15.75 (3.96)	14.60 (3.57)	13.80 (3.61)
Unfairness/Injustice	16.62 (2.42)	16.25 (2.09)	13.81 (3.71)	14.56 (3.46)	15.00 (3.87)	16.10 (2.65)	15.85 (3.62)	14.75 (3.67)
Frustration/Interruption	14.18 (2.64)	13.69 (3.34)	11.56 (3.72)	12.44 (4.32)	15.80 (3.69)	15.20 (3.64)	13.85 (3.83)	13.95 (3.78)
Annoying Traits	11.87 (2.70)	13.75 (3.59)	11.75 (4.69)	11.75 (4.39)	14.95 (3.75)	14.70 (3.73)	12.60 (4.90)	13.30 (3.67)
Irritations	13.37 (3.30)	13.75 (3.79)	11.44 (3.86)	11.94 (3.71)	13.85 (4.28)	14.65 (3.74)	13.80 (3.04)	13.35 (3.65)
PI Total	70.62 (9.75)	73.19 (12.15)	62.00 (15.92)	64.19 (17.32)	74.65 (16.00)	76.40 (15.69)	70.70 (16.29)	69.15 (15.47)

Note. All values given are means with standard deviations in parentheses.

8.3.3 Spielberger State-Trait Anger Expression Inventory (STAXI) Measures

Table 23 shows AT and RC groups means for the STAXI scales/sub-scales at four assessment points from screen to follow-up. There were no statistically significant differences between the AT and RC groups on any STAXI measure at pre-treatment.

Across the four assessment points there were no group differences for STAXI State Anger indicating that anger reactions at the time of assessment did not vary between the AT and RC groups.

There were no statistically significant between group differences in linear trend for any STAXI measure, although the Anger Control sub-scale of the Anger Expression scale came close ($F(1, 33) = 3.21, p = .83, r = .30$) indicating that the AT group had greater anger control in response to provocation following treatment.

A between-groups main effect for Anger-Out was detected that approached statistical significance ($F(1, 33) = 3.85, p = .06, r = .32$), and within-subjects effect for Anger Expression was also close to being significant ($F(3, 99) = 2.31, p = .09$). In the case of Anger Expression the results indicate that while the difference between the AT and RC conditions approached statistical significance across the four assessment points included in the analysis, there was not a significant between groups linear trend over time. This is likely to be, in part, a result of the changes in the AT and RC groups scores on this scale between screen and pre-treatment assessment points (see Figure 3). This pattern of scores resulted in a significant between groups 'cubic' effect ($F(1,33) = 5.15, p < .05, r = .37$).

Table 23
Screen, Pre and Post-treatment, and Follow-up STAXI Measures for Anger Treatment and Routine Care Groups

Measure	AT Group ($n = 16$)				RC Group ($n = 20$)			
	Screen	Pre-treatment	Post-treatment	4-month follow-up	Screen	Pre-treatment	Post-treatment	4-month follow-up
STAXI								
State Anger	13.69 (5.16)	11.69 (4.95)	10.12 (.50)	10.19 (.75)	13.45 (6.09)	11.30 (2.58)	11.85 (6.35)	10.15 (.49)
Trait Anger	22.65 (6.39)	26.00 (6.94)	22.12 (4.80)	19.75 (4.73)	24.60 (7.41)	26.30 (6.74)	23.95 (8.36)	22.05 (5.36)
Anger Expression	38.94 (6.32)	42.37 (10.38)	32.87 (12.75)	31.37 (10.54)	40.25 (6.71)	39.65 (11.06)	38.35 (11.10)	35.25 (8.93)
Anger-In	20.06 (2.62)	22.19 (4.29)	17.94 (4.40)	17.69 (4.63)	20.45 (3.58)	19.80 (3.81)	20.55 (4.85)	18.80 (3.19)
Anger-Out	19.31 (3.36)	20.50 (6.11)	17.31 (4.40)	16.12 (3.50)	21.20 (4.87)	21.55 (6.04)	19.55 (6.49)	18.20 (4.35)
Anger Control	16.44 (2.48)	16.31 (4.21)	18.37 (5.55)	18.44 (4.03)	17.40 (4.37)	17.70 (5.76)	17.75 (4.91)	17.75 (4.77)

Note. All values given are means with standard deviations in parentheses.

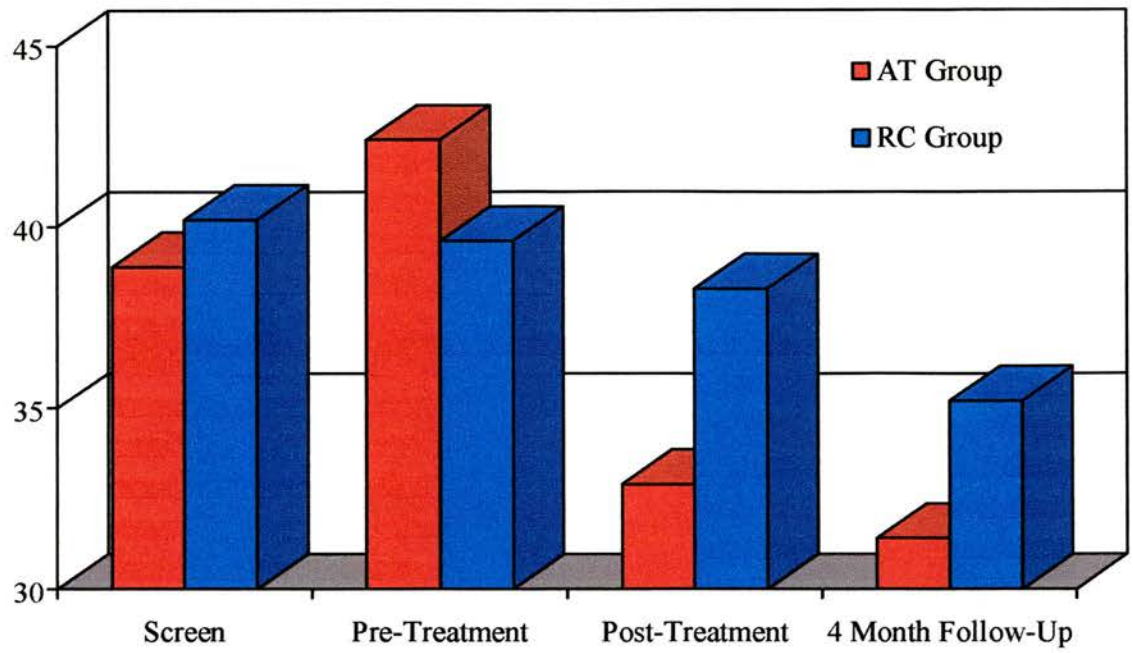

Figure 3. Mean STAXI Anger Expression scores for AT (n = 16) and RC (n = 20) groups over time.

In the AT condition scores improved significantly following treatment and were maintained at follow-up for the STAXI anger disposition measures of Trait Anger ($F(1, 15) = 9.93, p < .01, r = .48$), Anger Expression ($F(1,15) = 9.82, p < .01, r = .48$), Anger-In ($F(1,15) = 10.66, p < .01, r = .49$) and Anger-Out ($F(15) = 6.87, p < .02, r = .41$).

8.4 Staff-Rated Anger Attributes (WARS)

Similar to the analyses of self-reported anger, the analyses of staff-rated WARS data are based on 36 treatment study participants (AT group n = 16, RC group n = 20), as two treatment completers were discharged prior to the follow-up assessment. Screening, pre- and post-treatment, and 4-month follow-up means for the WARS Anger Index are presented in Table 24.

Table 24
Screen, Pre and Post-treatment, and Follow-up WARS Anger Index for Anger Treatment and Routine Care Groups

AT Group (n = 16)				RC Group (n = 20)			
Screen	Pre-treatment	Post-treatment	4-month follow-up	Screen	Pre-treatment	Post-treatment	4-month follow-up
7.69 (6.02)	7.94 (6.74)	4.69 (4.03)	4.37 (5.78)	8.25 (5.68)	8.50 (7.42)	6.75 (6.42)	7.25 (6.33)

Note. The ratings pertain to a one-week observation period. The WARS Anger Index is a seven-item scale of anger characteristics as judged by qualified nursing staff. All values given are means with standard deviations in parentheses.

A repeated measures mixed design analysis of variance (ANCOVA) with Anger Index scores as the dependent variable, time of assessment a within-subjects factor, treatment condition (AT vs. RC) a between subjects factor, and WAIS-R Full Scale IQ added in as a co-variate, was not significant ($F(1,33) = 1.49$, $p = .23$). However, as can be seen in Figure 4, the AT group's Anger Index mean scores reduce following treatment and fall further at 4-month follow-up. The linear trend for the AT group's Anger Index scores across time of assessment (screen, pre- and post-treatment, and 4-month follow-up) approached statistical significance, $F(1, 15) = 4.33$, $p = .055$, $r = .47$. The same analysis for the RC yielded a non-significant result.

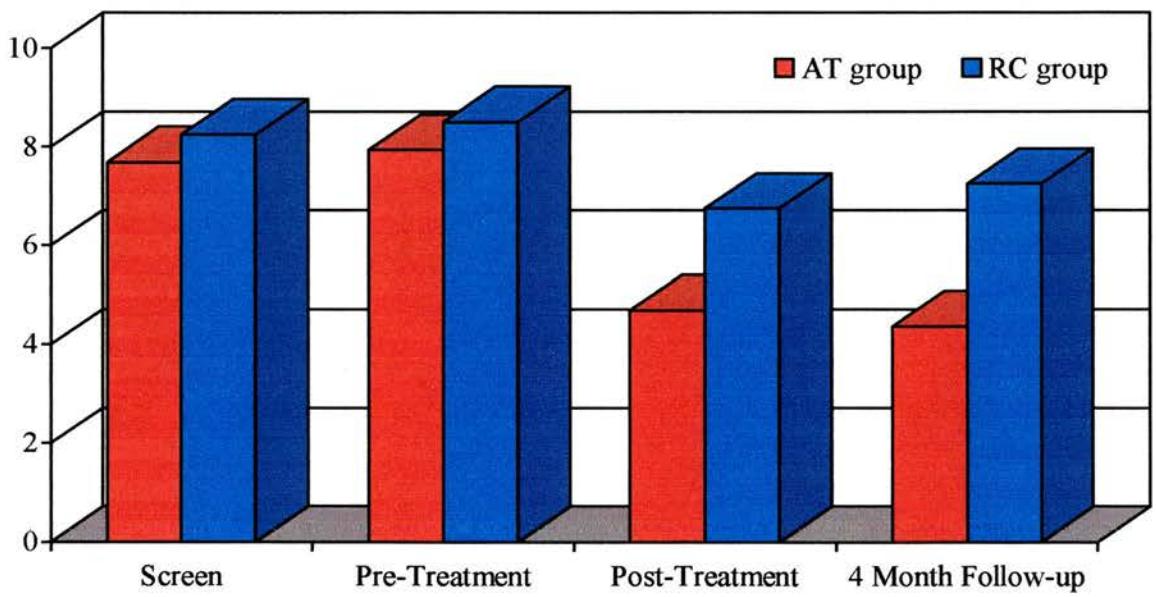

Figure 4. Mean WARS Anger Index scores for AT ($n = 16$) and RC ($n = 20$) groups over time.

Examining the pre- and post-treatment means for the seven attributes comprising the WARS Anger Index for the AT and RC conditions (Table 25), all ratings for both

groups were lower following treatment. However, the changes for the AT group "resistant to suggestions or requests", "impatient and frustrated" and "bitter or resentful" attributes were all significant ($t(15) = 2.82$, $p < .05$, $t(15) = 2.52$, $p < .05$, and $t(15) = 3.47$, $p < .005$ respectively) and "irritable or grouchy" neared significance ($t(15) = 2.06$, $p = .057$). None of the anger attributes change scores for the RC group were significant (largest $t = 1.63$).

Table 25
Pre- and Post-treatment WARS Anger Index Attributes for Anger Treatment and Routine Care Groups

	AT Group ($n = 16$)		RC Group ($n = 20$)	
Attribute	Pre-treatment	Post-treatment	Pre-treatment	Post-treatment
Angry or annoyed	1.06 (1.06)	.81 (.65)	1.20 (1.10)	1.00 (1.03)
Irritable or grouchy	1.34 (1.1)	.81 (.75)	1.35 (1.35)	1.05 (.10)
Resistant to suggestions or requests	1.00 (1.03)	.37 (.50)	1.30 (.99)	.95 (.10)
Impatient or frustrated	1.12 (1.02)	.56 (.81)	1.2 (1.06)	1.00 (1.03)
Tense or uptight	1.25 (1.24)	.87 (1.02)	1.10 (1.25)	1.00 (.97)
Agitated or restless	1.25 (1.29)	1.06 (1.12)	1.15 (1.23)	.80 (1.10)
Bitter or resentful	.87 (1.02)	.19 (.54)	1.15 (1.46)	.95 (1.05)

Note. All values given are means with standard deviations in parentheses.

8.5 Anger Coping Skills Attributes (CRS Scores)

The results of the Clinicians' Rating Scales (CRS) ratings, provided for by the AT group patients' named nurses following completion of treatment and at four month follow-up are given in Table 26. Staff completed rating scales for 17 out of the 18 AT group patients at the end of treatment - one patient was discharged almost immediately following his treatment and before his CRS could be completed. In the period between the end of treatment and 4-month follow-up, two more AT group patients were discharged or transferred and were subsequently lost to follow-up.

Table 26
Clinicians' Rating Scales (CRS) for AT Group Improvement on Anger Dimensions Post-treatment and at 4-Month Follow-up

CRS Anger Dimension	Clinicians' Ratings of Improvement	
	Post-treatment ($n = 17$)	4-Month Follow-up ($n = 15$)
Tolerance for frustration	3.5 (.5)	3.7 (.8)
Interpersonal sensitivity	3.4 (.5)	3.6 (.5)
Sociability	3.3 (.5)	3.6 (.6)
Irritability	3.3 (.6)	3.7 (.8)
Tenseness	3.6 (.6)	3.7 (.7)
Defensiveness	3.4 (.5)	3.6 (.7)

Note. The values above are means with standard deviations given in parentheses for ratings pertaining to change. The rating scale was: *'much worse'* = 1, *'a little worse'* = 2, *'about the same'* = 3, *'a little better'* = 4 and *'much better'* = 5.

CRS rating values above 3 indicate improvements in social behaviours relevant to anger coping skills. The means given in Table 26 for the post-treatment ratings indicate modest improvement on all of the anger dimensions, and this is maintained at four-month follow-up. Only one participant was rated as becoming 'a little worse' on one of the anger dimensions post-treatment and just two received this rating on one anger dimension each at four-month follow-up. Overall, these CRS ratings provide some limited evidence for treatment gains in AT participant behaviour as evaluated by direct care staff.

8.6 Staffs' Involvement in and Reaction to Anger Treatment (SQ Responses)

Following completion of treatment by participants in the AT condition, and before patients in the RC waiting-list control condition began anger treatment, named nurses for AT group patients completed the Staff Questionnaire (SQ). All 14 staff respondents were qualified staff nurses - thirteen of the 14 were senior staff nurses. Eight of the respondents were male, six female and they had been qualified on average 11 years (range 2 – 24 years). The mean length of time they had worked in their current clinical area (villa/unit) was 3.4 years (range 1 – 8 years). Nursing staff were asked in the SQ how many patients they have worked with who have received anger treatment. From the responses given (M = 3.1, range 1 – 10) it would appear that staff included patients who had received interventions outside of the current anger treatment project through, for example, involvement in group therapy programmes run in the hospital that involve anger management components.

Table 27
Nursing Staffs' Ratings Concerning Their Involvement in and Reaction to Anger Treatment using the Staff Questionnaire (SQ)

SQ Question	Named Nurses' Ratings ($N = 14$) Mean (*SD*)	Mode
1 Did patients benefit from the anger treatment they received?	3.93 (.47)	4.0
3 Was your experience of and involvement in the anger treatment project positive?	3.93 (.27)	4.0
4 Did you learn anything about anger treatment from your involvement in the project?	3.71 (1.10)	4.0
6 Has your involvement in the anger treatment project had an effect on the way you deal with other patients' anger/aggression problems?	3.07 (1.38)	4.0
8 Do you think that (other) patients on your villa/unit have benefited from some patients receiving anger treatment and/or your involvement?	2.64 (1.22)	3.0

Note. The rating scale for questions 1, 4, 6 & 8 was: *'not at all'* = 1, *'probably not'* = 2, *'maybe'* = 3, *'to some extent'* = 4 and *'a great deal'* = 5. Question 3 also had a 5-poimt scale where 1 = *'very negative'* and 5 = *'very positive'*.

Mean and modal responses for the 14 nurses that completed the five rating scales contained within the SQ are given in Table 27. Mean rating values above 3 indicate positive staff responses to particular questions. None of the staff respondents felt that patients had not benefited from receiving anger treatment. The majority indicated that patients had benefited to some extent (see Figure 5).

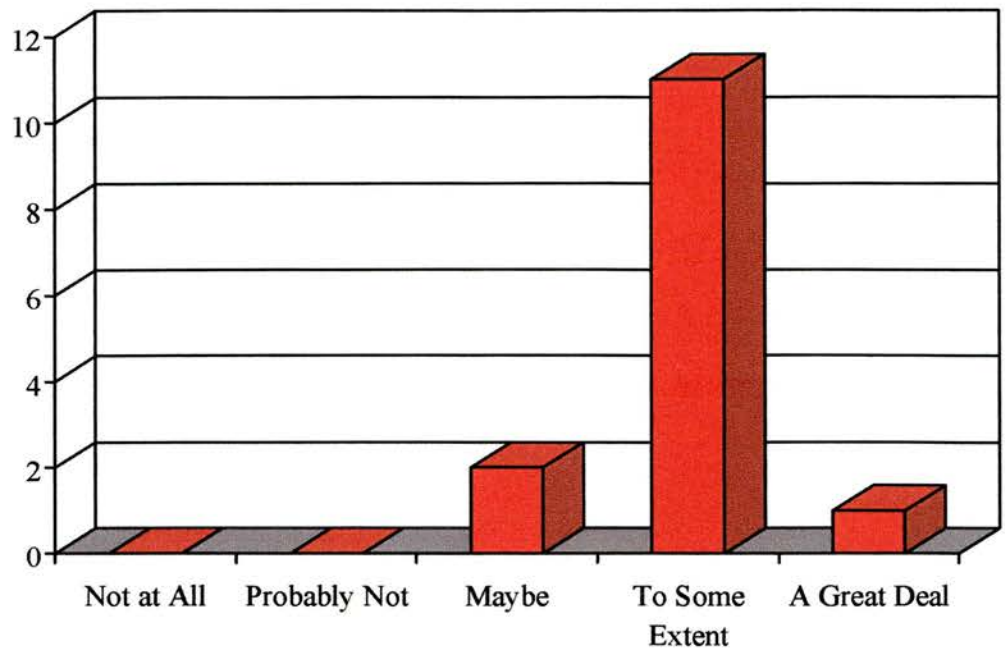

Figure 5. Staff Questionnaire (SQ) Item 1; Nursing Staffs' Responses, n = 14. (Would you say that the patients who have had anger treatment have benefited from it?)

All but one member of staff rated their experience of and involvement in the anger treatment project as positive, and no-one indicated that they had had a negative experience (see Figure 6).

The great majority of respondents (12 out of 14) felt that they learned something from their involvement in the project (see Figure 7). When asked what they had learnt, the most frequent response, mentioned by eight staff, was "a greater awareness of anger-related issues such as individual differences in the experience of anger", and "some reasons why patients might not use the anger coping techniques they had learnt in treatment". The next most frequent response (n = 5) was "knowledge about anger-coping strategies, including relaxation, effective communication and use of self-instructions". There was a strong positive correlation between responses to question 3 ('Was your experience..... positive?') and

question 4 ('Did you learn anything about anger treatment.....?'), r = .73. The number of years staff had worked in their current clinical area was negatively associated with ratings of how much had been learnt through involvement with the anger treatment project (r = -.56).

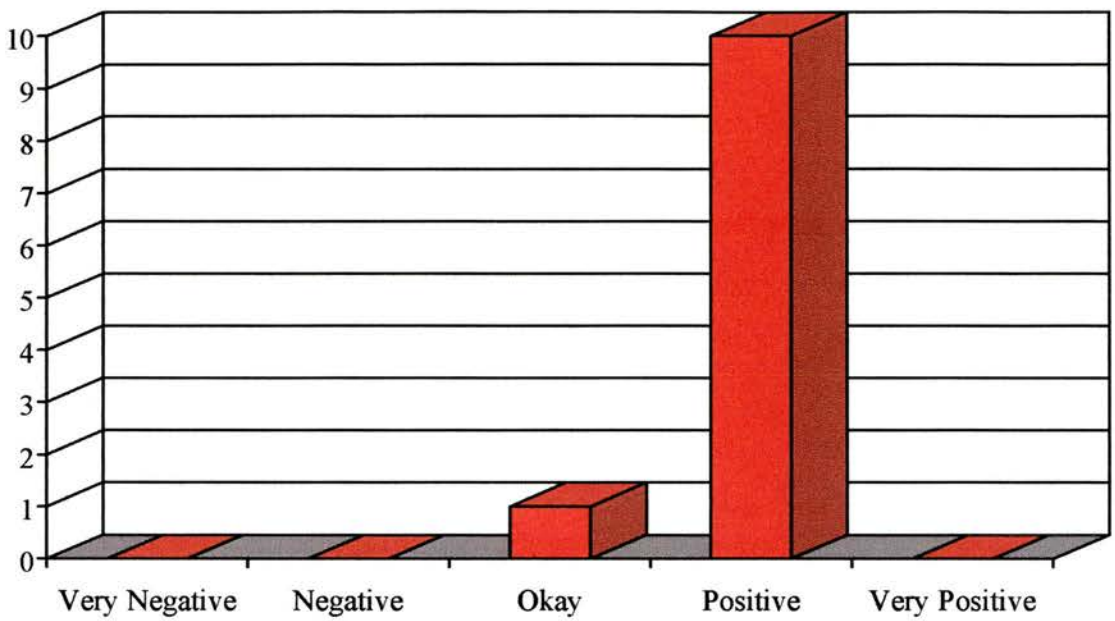

Figure 6. Staff Questionnaire (SQ) Item 3; Nursing Staffs' Responses, n = 14. (Would you say your experience and involvement in the anger treatment programme has been positive or negative?)

In terms of the whether their involvement in the project had had an impact on the way in which they dealt with patients' anger/aggression problems, most staff (10 out of 14) indicated either it had, or had to some extent (see Figure 8). When asked in what ways their involvement had had an impact on their responses to patients' anger-related problems, encouraging/advising them to use anger coping strategies was most frequently mentioned (n = 7), and five respondents said that their increased understanding and awareness of patients' anger problems had had an impact.

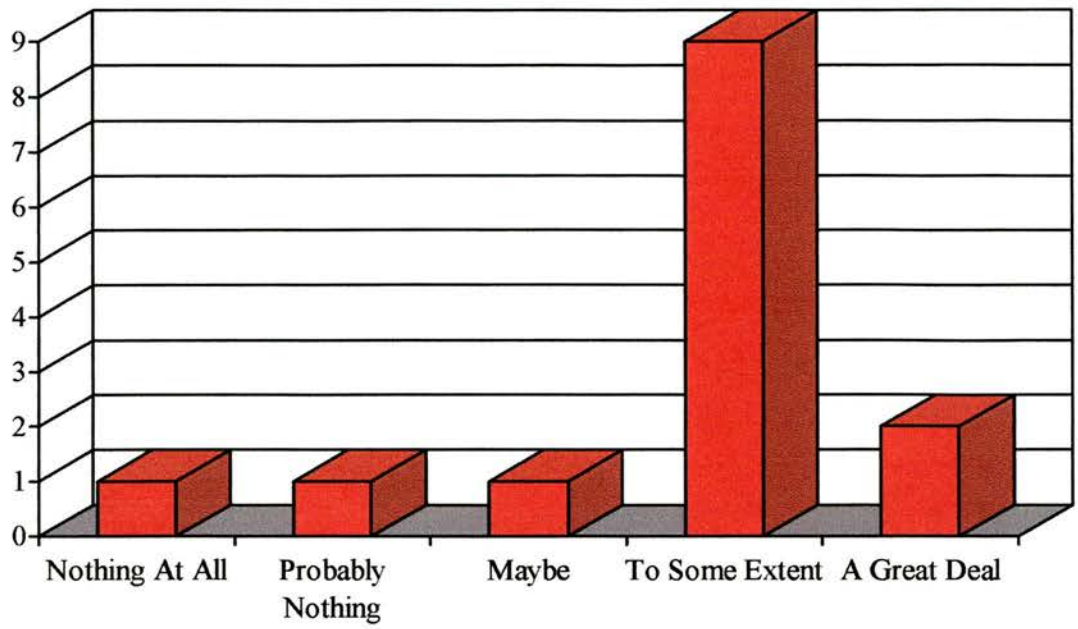

Figure 7. Staff Questionnaire (SQ) Item 4; Nursing Staffs' Responses, n = 14. (Do you think you have learned anything about anger treatment from your involvement in the project?)

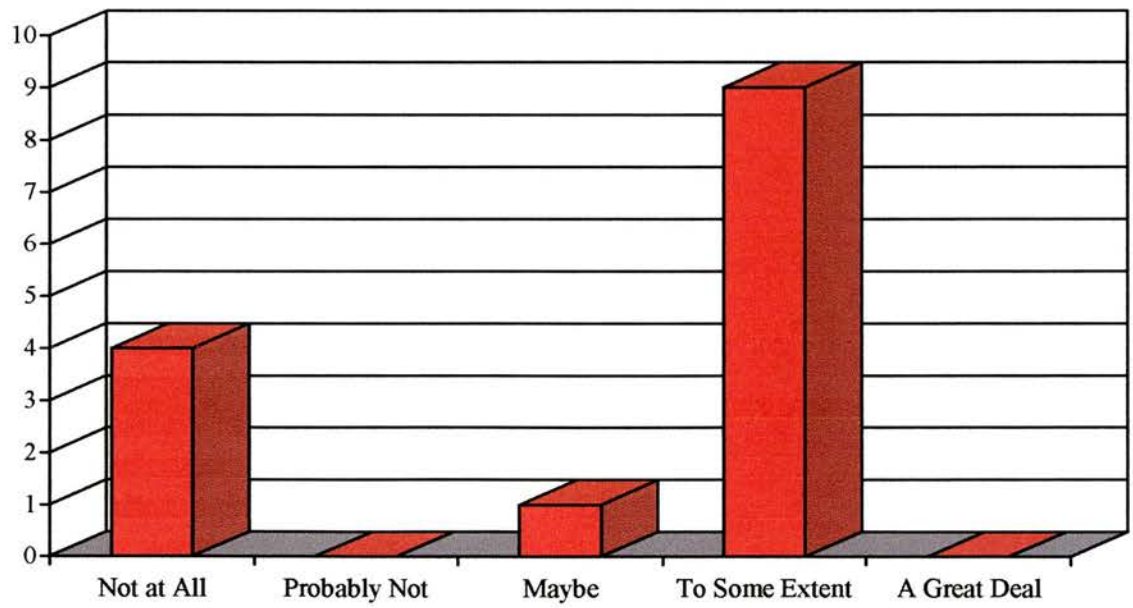

Figure 8. Staff Questionnaire (SQ) Item 6; Nursing Staffs' Responses, n = 14. (Has your involvement (in the treatment) had an effect on the way you deal with other patients' anger problems?)

Finally, staff were asked to rate if other patients (not involved in the anger treatment) had benefited to any extent from some patients in their clinical area receiving anger treatment and/or from their own involvement in the project. It can be seen from Figure 9 that due a bimodal distribution of scores the mean rating fell below 3 for this scale. However, the majority of respondents (9 out of 14) indicated that other patients either had, or maybe had benefited to some extent.

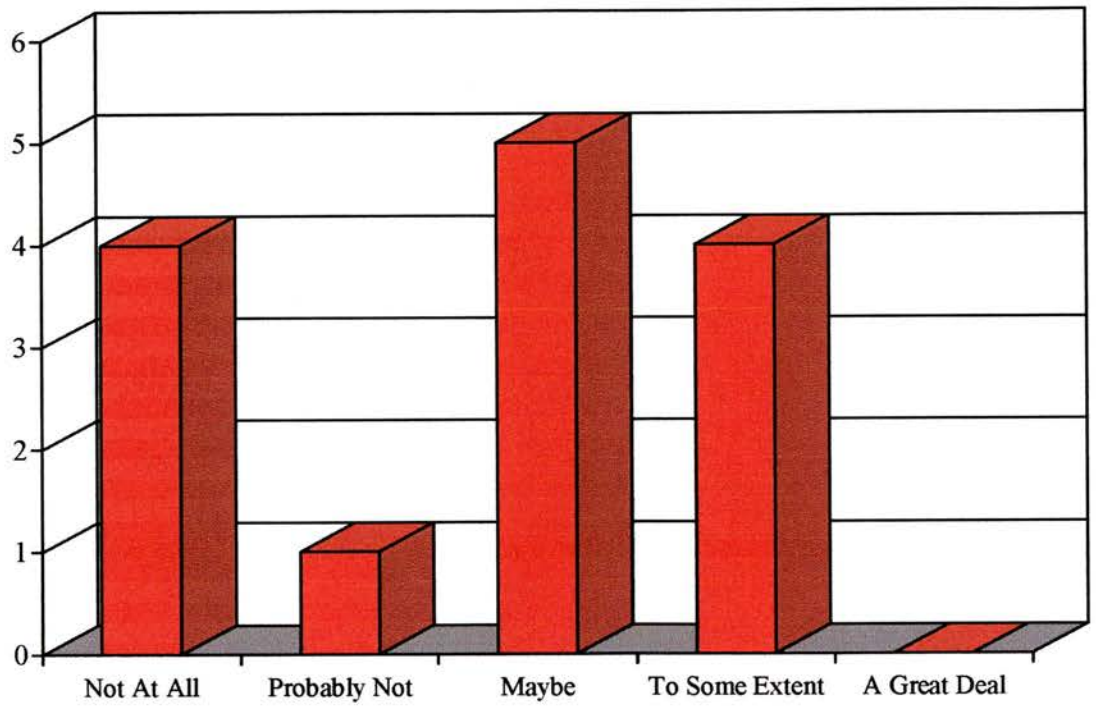

Figure 9. Staff Questionnaire (SQ) Item 8; Nursing Staffs' Responses, n = 14. (Do you think that *other* patients on the villa have benefited from some patients receiving anger treatment and/or from your involvement?)

The ways in which staff believed other patients had benefited from some patients in their clinical areas receiving anger treatment included their own increased awareness of anger-related problems (n = 7), and four respondents mentioned patients who had received anger treatment passing on information about their treatment to other patients. The extent to which staff thought other patients had

benefited was positively correlated to the impact they estimated their involvement had had on their responses to patients anger problems ($r = .70$). This treatment 'spill-over' effect was also inversely associated with the numbers of patients staff indicated that they had worked with who had received anger treatment ($r = -.51$).

CHAPTER 9: DISCUSSION

9.1 Anger Assessment Study

Various authors have now drawn attention to the involvement of anger as a relevant variable in the psychological functioning of people with developmental disabilities who reside in both hospital and community settings. The present investigation is the first systematic empirical analysis of anger in a hospital population of forensic patients with developmental disabilities. We sought to establish its prevalence among such patients in a large institutional setting, using multiple methods of assessment, and to examine its interrelationship with personal background, cognitive, personality, and hospital functioning measures, especially those bearing on violent behaviour. In doing so, we aimed to determine whether anger assessments could be obtained from the patients themselves and to what extent self-report psychometric assessments of anger with this population had reliability and validity.

9.1.1 Prevalence of Anger in the Study Population

The prevalence of physically assaultive behaviour post-admission (46.5%) in this inpatient sample, which constituted nearly all of the male forensic patients of the hospital (i.e., 129 of 137 patients), is consistent with rates for such aggression found in previous studies of people with developmental disabilities living in institutional settings. That nearly a half of the patients included in the study had been assaultive post-admission is noteworthy, given that they are resident in secure and semi-secure conditions characterised by high levels of structure and supervision provided by staff experienced in the care of severely disturbed patients. Importantly, 34.1% of this

inpatient sample (73.3% of those assaultive) had carried out two or more physical assaults post-admission. These prevalence rates indicate that anger and aggression are salient clinical issues for this client group and imply that serious attention ought to be given to anger assessment and treatment.

Standardised anger psychometric measures were modified for use with this patient population and were administered in interview format. While 129 male forensic patients did participate in the study, anger assessments were incomplete on 19 of them. Females (n = 22) were excluded from the sample, as were all males who were about to be discharged or transferred. We thus obtained complete self-report anger assessments on 110 male patients, which constituted 80% of the hospital's total male forensic population, and have thereby demonstrated the feasibility of engaging a very substantial proportion of a developmental disability hospital's forensic population in extensive assessment of anger.

The anger scores that we obtained for our sample with the STAXI, NAS, and PI measures were generally comparable to that for persons without developmental disability and to patients in other forensic and general psychiatric hospitals. However, the overall means across the anger self-report measures obtained here suggest that our participants were less guarded in disclosure. The STAXI State Anger and Trait Anger means of 11.6 and 18.8 are very close to the adult norms of 11.3 and 18.7 for those scales (Spielberger, 1996) and to means of 11.8 and 18.0 on those scales obtained for 119 male forensic patients at the high security hospital in Scotland (Renwick & Novaco, unpublished data). The STAXI Anger Expression mean of 30.8 is, however, substantially higher than the adult norm of 19.4 (Spielberger, 1996) and is also higher than the mean of 25.1 for the above Scottish

hospital patients. The NAS Total and PI means of 92.5 and 62.9 are quite comparable to the means of 90.1 and 65.3 found for California State Hospital patients (Novaco, 1994) and to the means of 95.8 and 68.3 for psychiatric patients in a behavioural treatment programme at St. Andrews Hospital, England (O'Neill, 1995). However, they are higher than the means of 82.5 and 56.6 found for the male patients in the Scottish high security hospital (Renwick & Novaco, unpublished data), which are in turn comparable to the values found for male offenders in Millhaven Institution, Canada (Mills *et al.*, 1998). Lower scores on the STAXI and NAS were reported by Loza and Loza-Fanous (1999) for Canadian criminal offenders (their means are 11.6 for State Anger, 15.1 for Trait Anger, 73.0 for the NAS, and 50.5 for the PI, averaging across the values given in their Table 1).[4]

9.1.2 Reliability and Validity of Self- and Staff-Rated Anger

The assessment of anger can be expected to be a reactive test situation, especially in forensic settings, and we would conjecture that the some of the anger assessments obtained from above offender samples reflect guardedness in anger self-reports. Alternatively, it may be that the patients in our sample have over-reported anger, perhaps because it might in some way serve their sense of self-esteem or because they were encouraged to do so by some aspect of the testing situation. However, the significant associations of patient-rated anger with staff-rated anger

[4] In view of the rather low anger scores for the STAXI, NAS, and PI, as well as other psychometric scales used by Loza and Loza-Fanous (1999), it is not surprising that they did not find that anger was predictive of violent recidivism. The restricted range on these predictors would weigh againstobtaining significant effects. Therefore, their means for the STAXI State Anger and Trait Anger scales are close to the lowest possible score of 10 for each of those scales which have a maximum of 40.

and with patient assaultiveness, as well as our research team's clinical observations, suggest that our participants were forthcoming and veridical in their anger reporting.

Parallel to this possibility of guardedness in anger self-reporting by people in forensic settings, Benson and Ivins (1992) inferred that developmentally disabled clients might have a social desirability response bias in self-reporting anger or may lack awareness of angry feelings, thereby suppressing anger scores. Patients in the current study do not appear to be affected in these ways. However, Benson and Ivins did find that their research participants in the mild range of mental retardation, as are our research participants, reported significantly more anger than did those in the moderate/severe range. Further research is needed to determine whether level of functioning, hospital setting, or project team factors bear on the assessment results obtained here.

The anger measures were found to have high internal reliability and to have reasonable stability when administered in testings that were approximately two to three weeks apart for the staff ratings and two to six months apart for the self-report scales in a sub-sample of cases. The STAXI and NAS measures had substantial inter-correlation, particularly between the NAS scales and Trait Anger, Anger Out, and Anger Expression, providing evidence for concurrent validity between these instruments, whose order of administration was counterbalanced. Staff ratings of patient anger obtained with regard to ward observations were also found to have high internal reliability and to be correlated significantly with patient self-reported anger. While the coefficients in this regard were relatively low (.26 for STAXI Anger Expression and .28 for NAS Total), these are correlations between two very different modes of measurement. To have found some statistically significant convergence of

anger assessment between staff ratings and patients' own accounts of their anger disposition seems noteworthy, and we suggest that this issue continue to be examined in future research, particularly as it bears on the evaluation of anger treatment outcomes.

We tested the validity of the obtained anger assessments by examining the association with assault records data. Anger, as rated by staff and as reported by the patients themselves, was significantly related to the patients' record of assaultive behaviour in the hospital. That is, patients who had been physically assaultive post-admission self-reported significantly higher levels of anger on multiple anger measures than did those who had not been assaultive, and staff-rated anger converged in this regard. These associations were further in evidence with regard to the total number of physical assaults, which was correlated .36 with STAXI Anger Expression and .43 with NAS Total. We examined this relationship in more detail by controlling for age, IQ, and violence offence history, which are variables having *a priori* relevance to assaultive behaviour. This block of co-variates was a significant predictor of assault in hospital, but anger, indexed by NAS Total, added 13.1% to the variance explained for hospital assaultive behaviour. The final regression, which included the co-variates, NAS Total, and EPQ Extraversion, accounted for over 25 % of the variance in patient assaultiveness. These findings point to the potential clinical and managerial value of anger treatment intervention in such settings.

Anger as rated by staff was differentiated by violent offence history, but self-reported anger was not. It is certainly plausible that staff knowledge of offence history influenced their ratings of patient anger and recorded aggression for the week of observation. While it is not generally the case that staff in this hospital are able to

recall details of patient histories, and the ethos of the hospital's direct care staff is generally to relate to patients *de novo*, the obtained relationships for the staff ratings may be spurious. Self-reported anger was distributed across a range of offending behaviours, including inappropriate sexual behaviour and firesetting. This implies that anger treatments should be provided to the whole forensic patient population, based on individual clinical assessments of anger problems, rather than being restricted to those with histories of violent behaviour. This generality of anger involvement across criminal conduct categories in our data is consistent with the clinical impression gained from this client group that various forms of serious offending behaviour are often associated with angry feelings that become overwhelming prior to an incident.

9.1.3 Relationship between Anger and Patient Level of Functioning

Studies by Hill and Bruininks (1984) and Smith *et al.* (1996) found, respectively, that the range of maladaptive behaviours and the severity of aggressive behaviour were inversely proportional to the level of disability in the developmentally disabled populations they investigated. Results obtained in the present study lend support to these findings. The patients for whom clinical assessments could not be completed scored significantly lower on a test of global intellectual functioning (WAIS-R) and were rated by staff as being significantly more angry than those patients who completed assessment. Further, the regression of the number of physical assaults committed post-admission on IQ (WAIS-R Full Scale) was significant, indicating that the less intellectually able patients were more likely to have carried out more assaults. From a 22-year prospective study of the

relationship between intellectual functioning and aggression in non-disabled subjects, Huesmann, Eron and Yarmel (1987) proposed that aggression interferes with intellectual functioning through a dual process. In early childhood, children having lower intellectual functioning are prone to developing aggressive behaviour because of difficulties in learning more complex non-aggressive, pro-social interpersonal skills. Aggressive behaviour, in turn, may result in failure to develop intellectually in later life, due to its isolating and alienating effects that minimise the opportunities for effective education. This model may have equal applicability for people with developmental disabilities.

9.2 Anger Treatment Study

This study demonstrates that a systematic and controlled evaluation of a new treatment approach for people with developmental disabilities can be completed successfully in a routine clinical setting despite inevitable logistic, organisational and clinical barriers. With few additional resources, the study succeeded in bringing together and engaging over time service-users, therapists and direct care staff to deliver a substantial new treatment programme within a robust evaluative framework.

The results of the treatment study show that detained offenders with developmental disabilities can benefit from a newly formulated individual cognitive-behavioural intervention targeting anger symptoms. The patients in the treatment condition showed a broad pattern of significant pre- to post-treatment reductions on a range of self-report measures of anger traits, disposition and reactivity, indicating that the intervention had a general impact on symptoms associated with anger

problems. More specifically, significant between group differences were found for participants who completed the anger treatment in terms of reduced disposition to the physiological arousal component of the experience of anger, less intense reactions to particular types of anger-provoking situations and increased ability to control the expression of anger.

In addition to the self-report measures, anger treatment participants showed significant post-treatment improvements on many staff-rated anger attributes. Direct care staff also rated patients who had received anger treatment as having improved on a number of social behaviours pertinent to anger control, comparable to the degree of improvement reported by Renwick *et al.* (1997) for forensic psychiatric patients following a similar anger treatment procedure.

Involvement in the treatment appears to have had a clinically significant and positive impact on nursing staffs' perceptions of their own abilities to understand and deal with the anger problems presented by their patients. The majority of staff indicated that they had learnt useful things about anger treatment, and this was associated with positive experiences of involvement with the treatment project. Also, most staff believed that their involvement in the treatment project had had a beneficial effect on their responses to patients' anger problems.

9.2.1 Patient Engagement, Motivation and Satisfaction

One outstanding, clinically significant achievement of the current study was the successful engagement and sustained motivation of treatment participants. A number of writers have commented on the special challenges, for both therapists and patients, that therapeutic interventions for anger problems present (DiGiuseppe,

Tafrate & Eckhardt, 1994; Novaco, 1995; Novaco & Welsh, 1989). These difficulties are often related to the inherent threat such clients present, their impatience and impulsiveness, and the positive functions and reinforcement that their anger often holds which causes it to be deeply embedded and difficult for them to release.

These, and other issues, can create significant difficulties in establishing therapeutic alliances, helping clients to see anger as a legitimate treatment target and motivating clients to contemplate change with respect to their anger-related difficulties. In addition to these characteristics, many of the participants in the current study have life histories characterised by trauma and repeated experiences of failure and rejection across a range of health and social care settings. Add to this list impaired intellectual functioning and associated limited psychological/emotional resources, and the scale of the task involved in successfully engaging these patients in anger treatment becomes apparent.

Despite these very substantial difficulties and challenges, the therapy was acceptable to participants who expressed high levels of satisfaction with it. Treatment completers' responses to several questions in the PEAT- Preparatory and Treatment Phase questionnaires were very positive. The responses obtained from the 18 treatment completers for the following questions were: *"Overall, was it worthwhile for you to attend the sessions?"* (Yes, most of the sessions, 89%*, 78%**); *"Have you enjoyed the sessions?"* (Yes, most of the sessions, 94%*, 83%**); *"Have the sessions been helpful to you?"* (Yes, in lots of ways, 78%*, 83%**); *"Do you think you have changed since you started your anger treatment?"* (Yes, a lot for the better, 22%*, 67%**); and *"Are you a more or less angry person*

now compared to before you started your anger treatment?" (Less angry, 83%**). Percentage figures marked * and ** pertain to responses given at the end of the preparatory and treatment phases of treatment respectively.

The broadly psycho-educational six-session preparatory phase of treatment highlighted the normality of anger, but gently introduced the personal costs associated with recurrent maladaptive anger reactions. This appears to have been successful in helping psychologically fragile participants form therapeutic relationships and become motivated to maintain them. This stage of treatment enabled participants to gradually engage in the therapy process without feeling threatened. Even those patients who were initially most wary or suspicious chose to continue beyond the preparatory phase, despite being given an opportunity to opt out.

Our study participants, like many others in custodial settings, are typically rooted in the here-and-now, avoid reflection of their emotionally painful and shame-inducing pasts, and have great difficulty conceptualising and planning for the future. Despite these characteristics, they were able to benefit from an intensive therapy that integrates past negative into day-to-day, here-and-now experiences in order to prepare for future challenges. This was achieved within an institutional context that focuses on the present and gives little consideration to the individual's past or their long-term future (Heyman, Griffiths & Taylor, 2002). Despite its more emotionally demanding qualities, the 12-session anger treatment phase did not induce any marked degree of anxiety or distress in participants. Treatment sessions progressed as planned, with very little additional work required from therapists in supplementary sessions outside of the protocol.

All 20 participants who entered treatment as part of the AT group progressed to the treatment phase. Two participants dropped out before completing the treatment phase. On the face of it, given the clinical complexity of the patients involved and the nature of the therapy, this appears to be a low rate of withdrawal. However, it is difficult to compare this with other studies as few researchers reporting on anger treatment outcomes with developmentally disabled clients have indicated numbers of participants refusing to consent to, or withdrawing from treatment. That said, Rose (1996) reported that one out of 6 subjects dropped out of an anger management group, and Rose *et al.* (2000) found that five out 30 participants in a group anger management programme dropped out before completing the intervention. Both of these studies involved people living in community settings without forensic histories.

The low dropout rate in the current study may then be directly associated with the reported levels of participant satisfaction, which in turn appears to be based on the perceived utility and attractiveness of the treatment. However, it should be kept in mind that participants are detained patients who conceivably could have believed that non-compliance with the treatment offered might compromise their progress through the hospital rehabilitation system towards eventual discharge. Despite the best efforts of the research group, it is likely that at least some participants entered treatment with this consideration in mind.

Therapists occasionally reported in peer supervision sessions that particular participants seemed to be engaging in treatment at a superficial level – the concern being that they were 'playing along'. However, almost without exception, for those participants who completed treatment, therapists indicated that at some point during

the therapeutic process they began to respond in a meaningful and beneficial way to the content and/or process. Participants' feedback through the PEAT questionnaires completed at the end of treatment provides some evidence to support these clinical observations. That is, whilst the percentage of participants reporting enjoyment reduced from post-preparatory to post-treatment (94% to 83%), the percentage of those indicating that the sessions had been helpful increased (from 78% to 83%), and it increased markedly (from 22% to 67%) for participants' own estimates of positive personal change following the treatment phase.

In the cases of the two participants that dropped out of the current study, the reasons given were not directly related to the treatment, which both patients reported was positive and helpful. These explanations concur with the views of the therapists involved in each case and thus should probably be taken at face value. Examination of the characteristics of the two participants that withdrew indicates that, compared to the treatment study sample as a whole, they are a little more intellectually able, slightly less likely to respond in a socially desirable direction, and scored between a half and one full standard deviation lower on the STAXI and NAS anger disposition summary scales. Neither had any criminal convictions for violent offences. The possibility shouldn't be discounted, therefore, that the treatment is less likely to sustain the engagement of less angry and less physically violent patients who perhaps discern (following some preparatory phase experience) that the treatment is not going to be of significant benefit to them. The numbers involved in the current study are too small to make draw any firm conclusions in this regard, but the issue is worthy of further investigation in terms of predicting which clients are more likely to complete

treatment and should be prioritised in service settings where demand might outstrip supply.

9.2.2 Specific Effects and Potency of Anger Treatment

There are a several possible reasons for the apparent specific effects of treatment in reducing anger arousal and reactivity to unfairness/injustice, and increasing anger control in this sample. The somatic aspects of anger arousal, marked by activation of the autonomic nervous system, is possibly the most obvious and identifiable aspect of the experience of anger for many people. This might be so particularly for people with more limited intellectual abilities. Therefore, increasing understanding and self-awareness of the most concrete and noticeable element of the anger experience (dry mouth, palpitations, churning stomach, sweating, breathlessness, muscular tension/discomfort, etc.) is likely to be more achievable than for more abstract concepts such as subjective affect or cognitive labelling of emotional states.

The arousal aspect of anger is possibly more salient and, therefore, of more interest to younger men often concerned, and sometimes preoccupied with their physicality and self-image. As a consequence, they might be particularly motivated to develop a greater degree of control over the anger arousal that they experience. The feedback provided by AT group patients' responses to the PEAT questionnaires provides some support for this. Learning how to relax (in order to reduce the physiological arousal associated with anger) were the most frequently, and second most frequently endorsed items in terms of helpfulness/usefulness on the PEAT-

Preparatory and PEAT-Treatment Phase questionnaires respectively. The combination of accessibility and subjective importance of the arousal domain of anger, associated with a high degree of motivation, might then partly explain why the treatment appears to have been particularly effective in this area.

An additional factor that could have contributed to the specificity of the anger treatment is the clinical impression that a number of treatment group participants had been previously exposed to various forms of relaxation training in different service settings. Despite the unknown quality or nature of this previous work, it seems likely that at least some patients had been primed for work on the arousal regulation aspect of anger responses.

The treatment intervention also appears to have had a specific impact on anger intensity experienced in response to situations that this patient group find particularly provocative – that is, unfair or unjust treatment by others. For both the AT and RC conditions, unfair or unjust situations evoke the most intense anger prior to treatment (see Table 22). It should be no surprise that people with the life experiences of this group, in addition to their current status as detainees in secure settings, are acutely sensitive to such perceived violations and react sharply with feelings of justification.

One possible reason why non-significant between group ANCOVA results were obtained for a number of the self-report anger outcome measures could be that the treatment was simply not potent enough to change some dimensions of anger that are slower to change because of their trait-like or 'characterological' nature. To further examine the resistance of these anger disposition characteristics to change

through treatment, post hoc paired samples *t* tests were conducted for each of the treatment groups. Of the 11 NAS, PI and STAXI anger measures that did not yield significant between group differences, there were no significant pre- to post-treatment decreases on any of the NAS or STAXI measures for the RC group (although it did show significant reductions on three PI measures). For the AT group there were significant pre- to post-treatment decreases on all but one of these measures, with *t* values ranging from 2.16 to 3.72. This pattern of results suggests that the lack of between group treatment effects using linear trend analyses on these anger disposition, reactivity and trait measures is more likely to be a function of limited statistical power in this study rather than ineffective treatment.

9.2.3 Statistical Power, Design and Analysis Considerations

Accepting the null hypothesis when it is in fact false, and should therefore be discarded, is a type II error in statistical analysis terms (Cohen, 1992; Hallahan & Rosenthal, 1996). Type II error is denoted as β and statistical power is the probability of *not* making a type II error (1 - β). In the context of this study a type II error would involve failing to reject the null hypothesis when it is false and should be rejected. Cohen (1992) recommended 26 cases per group to reliably detect (at power $1-\beta = .80$) a large effect size at $\alpha = .05$ significance levels with two-group ANOVAs.

Group sizes of 20 in the current study were thought to be justified taking into account the large effect sizes obtained in previous studies that have addressed similar questions using similar paradigms in anger treatment outcome research (Chemtob *et al.*, 1997; Rose *et al.*, 2000; Stermac, 1986). Given this previous research, along with the measures taken as suggested by Hallahan and Rosenthal (1996) and Rosnow and

Rosenthal (1988) to improve the design and analysis of the study, including standardised experimental procedures, use of reliable measuring instruments, repeated measures designs and focused linear trend analyses, it was anticipated that there would be sufficient statistical power to detect treatment effects. However, the failure to detect significant between group differences for those self-report anger measures that yielded significant pre- to post-treatment results for the AT group on the post hoc analyses indicates that these measures were not stringent enough. While the drop-out rate from treatment was low (two out of 20 cases), this along with two further cases being lost to follow-up further compromised the power of the study.

It has been suggested that conclusions about the efficacy of treatment inferred on the basis of statistical comparisons between mean group changes are of limited value as these tests give no information concerning the variability of participants' responses to treatment which is of great interest to clinicians (Jacobson & Truax, 1991). Also, simply because a statistical significant difference is obtained there is no guarantee that it will be of any clinical significance (and vice versa). One recommendation has been to give the effect size as well as statistical significance of research findings, as effect size (that is the extent to which the effect studied differs from zero) provides more clinically useful information than statistical significance levels (Rosnow & Rosenthal, 1988). In the current study the effect sizes reported for those results that were statistically significant were all medium-large as defined by Cohen (1992). Further, many of the between group statistical comparisons that failed to reach the accepted standard of $p < .05$ had effect sizes that were in the low-medium range. The effect sizes (r) for NAS Cognitive and Behavioural, PI Total, STAXI Anger Expression, Anger In and Anger Out = .27, .23, .20, .24, .25 & .30

respectively. These findings might lead one to conclude that the treatment was more effective in reducing anger symptoms than might be the case from examining only the statistically significant comparisons reported alone.

Clinically significant change is often associated with a return to normal functioning (Jacobson, Follette & Revenstorf, 1984). If clients entering therapy can be considered to be part of a dysfunctional population, then a clinically significant change will move individual clients away from this population and closer to the mean of the functional population on a particular outcome measure. However, evaluating change in patients with very long-standing, treatment resistant anger symptoms poses the problem that even clinically relevant change would not necessarily place people back in the functional range. In addition, a major difficulty in applying this standard to psychotherapy outcome research with people with developmental disabilities is the absence of normative data for psychometrically sound outcome measures. Beyond this technical issue there is the problem of operationally defining clinical significance for different disorders and conditions. Clients, clinicians, researchers and managers may all have different views as to what is a clinically significant outcome. Even small changes in symptom levels could lead to important changes in clients' abilities to cope with problems, their behaviour or their psychological well-being that would not reach statistical significance, effect size or arbitrary clinical significance thresholds.

In the current study, in addition to a range of significant statistical comparisons and respectable effect sizes, there are some further indications that the treatment was effective. For the main self-report anger indices of NAS Total, PI Total and STAXI Trait Anger and Anger Expression, the number of treatment

'responders' (that is, those whose scores changed in the desired direction following treatment) was more than 50% in both the AT and RC groups. However, the percentage of patients whose scores moved more than one standard deviation (*SD*) in the desired direction away from the treatment sample intake means (n = 40) was consistently higher in the AT group. For example, the percentage of patients in the AT group scoring more than one *SD* below the intake means was more than double that for the RC group on PI Total and Anger Expression scales (33% vs. 15% and 50% vs. 15% respectively). On the staff-rated WARS Anger Index, the percentage of treatment responders in the AT group was 75% as opposed to 25% in the RC group.

Beyond these numerical indicators, therapists' ratings of patients competence on the Patients Competency Checklists clearly indicated that the majority of patients had benefited with regard to increased competence in coping with anger problems (see Tables 17 & 18). Direct care staffs' views appear to concur with this as evidenced in their responses to the Clinicians' Rating Scales and Staff Questionnaire (Tables 26 & 27 respectively), as well as their ratings WARS Anger Index item scales. Most importantly, in addition to the reduced levels of self-reported anger on the psychometric scales, AT group participants indicated clearly in their evaluations of the treatment (PEAT questionnaires) that they felt they had changed for the better and were less angry than before they started anger treatment.

9.2.4 Staff-Rated Assessment Issues

The non-significant between group effect for the staff-rated WARS Anger Index is possibly a function of limited power in this study. This is supported to some extent by the significant post hoc *t* tests on the AT group's pre- to post-treatment

scores on the Anger Index and three of its item scales. There were no significant pre-post treatment changes in the RC group's Anger Index scores. However, the pre-treatment means for the treatment study sample (n = 38) on each of the seven items making up the WARS Anger Index were between 1.00 and 1.34 on 0 – 4 rating scales. Therefore, staff reported low levels of angry behaviour for this sample for a seven-day period prior to treatment, thus creating a floor effect that would make it very difficult to demonstrate marked improvements on these measures due to treatment intervention. It may be that this baseline observation period of seven days was too short. However, the low rates of anger recorded by staff may also be associated with the study participants living in secure settings with high levels of structure and supervision by staff experienced and skilled in the in the management of disturbed and aggressive patients. This may offer an alternative explanation for the failure to detect a significant group treatment effect for the WARS Anger Index.

As well as the low levels of staff-rated anger as measured on the WARS Anger Index, there were low rates of overt aggression during the seven-day pre-treatment WARS assessment period. During this interval two AT and two RC group participants were recorded as having been physically assaultative. During the seven-day post-treatment WARS assessment period no incidents of physical assault were recorded for either group.

The reliability of staff-rated anger and aggression has been questioned (Benson & Ivins, 1992; Black *et al.*, 1997) and inter-rater reliability was not established for the WARS in the current research programme. The difficulty that low base rates of overt aggression in highly supervised and controlled environments creates in demonstrating treatment effects has been discussed by several anger

treatment researchers (Alves, 1985; Black *et al.*, 1997; Howells, 1989; McMurran, Charlesworth, Duggan & McCarthy, 2001).

A different form of staff assessment, the Clinician's Rating Scale (CRS), administered only in the anger treatment condition, did point to some improvement in social behaviour associated with anger control coping skills. The CRS ratings may accurately reflect limited progress made by patients in developing pro-social anger-coping behaviours at the point of assessment. Following practice *in vivo* of the skills learnt in therapy sessions, one might expect these behavioural ratings to improve over time, and there is some indication in the four-month follow-up data to support this speculation. Despite the low magnitude of the staff-rated treatment effects, as evidenced by the CRS and the WARS measures, the ratings are in the hypothesised direction, and they converge with participants' self-reporting.

While physical aggression appears to be a low frequency behaviour in this sample, when it does occur the consequences are often serious. If assaults by patients in secure settings do not happen very often, they are not trivial matters when they do. They can result in serious injury to other patients and to staff, which in turn can have significant costs in terms of absence through sickness, high staff turnover, etc. Also the consequences for perpetrators can be serious, resulting in longer periods of incarceration. Because the relevance of anger dyscontrol is to a large extent a function of its link to aggressive behaviour, a much longer observational period, utilising reliable measures before, during and following treatment will be needed in future studies to establish whether changes in patient anger are reflected in aggressive and pro-social behaviour on a day-to-day basis.

9.2.5 Methodological Problems

9.2.5.1 Control Condition Considerations

The use of a viable control condition is a potential limitation of the current study. In effect the study evaluated cognitive-behavioural anger treatment as an addition to the best routine treatment compared with this routine treatment alone. Routine treatment could not ethically be withdrawn from RC group participants, *or* from the AT group. It is possible, therefore, that the treatment effects obtained for the AT group were the result of an additional 18 hours of non-specific attention. Although there were specific symptomatic changes in predicted directions on several key outcome measures, the lack of significant improvements on a number of other scales suggests that it cannot be assumed that the cognitive-behavioural components were the effective treatment ingredients. It could be argued that the detailed assessments and regular contacts with members of the research team received by the RC group approximated to an 'attentional' control condition. However, this does not fully control for the amount of therapy time provided in the treatment condition. Better controlled studies would clarify further the issue of specific versus non-specific effects of anger treatment.

We don't know to what extent waiting for treatment and exposure to detailed and repeated assessment had an impact on the control group. For ethical reasons RC group participants had to know that they would offered anger treatment in the near future. Part of the process of seeking informed consent to continue to monitor and assess them for comparison purposes involved control group participants

acknowledging that they had some difficulties with anger control. By the time they started treatment they would have received four detailed assessments of their anger-related problems, involving up to eight sessions of around one hour each. These assessments involved specific discussion of their anger experiences in a supportive atmosphere and in the context of treatment being offered in the near future. This process in itself may have constituted a therapeutic intervention resulting in individuals increasing their awareness and self-monitoring of anger-related problems. Self-monitoring has been shown to be an effective self-management procedure in people with developmental disabilities (Harchik, Sherman & Sheldon, 1992).

AT group patients' medication and treatment plans during treatment were monitored retrospectively using the Index of Change during Treatment (ICT). Three out of eighteen participants that completed treatment were recorded as having had changes to their medication and just two had other changes to their treatment plans. Unfortunately the ICT was not completed for RC group participants. It is possible, therefore, that some of the observed improvements were at least partly due to medication and other treatment changes, particularly in the control group. It might be anticipated that clinical teams are less likely to alter the treatment plans of patients in active and intensive psychological treatment. However, this possibility should be explored in future studies using more stringent monitoring of the treatment regimes of patients in both the treatment *and* control conditions.

9.2.5.2 The Confound of 'Treatment as Usual'

It is clear from the outcome data that the RC group's scores improved on many anger measures during the period it was waiting for treatment. An

improvement in scores on outcome measures in control and comparison conditions during the period that the treatment condition is receiving an experimental intervention is a common phenomenon in treatment outcome trials. A recent example in the anger treatment literature is the study by Chemtob *et al.* (1997). This confounding phenomenon is also observed in the wider cognitive-behavioural therapy outcome literature – see for example studies by Barrowclough, King, Colville, Russell, Burns and Tarrier (2001), Kuipers *et al.* (1997) and Oosterban, van Balkom, Spinhoven, van Oppen and van Dyck (2001) investigating cognitive-behavioural therapy outcomes for anxiety in older people, clinical symptoms in psychosis, and social anxiety respectively.

If improvements in the RC group (and in the AT group) were due to other treatments provided routinely including medication, nursing interventions and group therapies, then we would have expected to have seen improvements on anger scores in the period before anger treatment began. The time that elapsed between study participants being administered screen and pre-treatment assessments was on average around three months. Paired *t* tests for the self- and staff–rated anger measures showed that there were no significant improvements in scores for either condition during this baseline period. In fact scores on many of the scales used worsened during this baseline period (see Tables 21 through 24).

9.2.5.3 Systemic and Diffusion Effects of Anger Treatment

As Figures 1 to 4 graphically illustrate, there were marked improvements in scores for the NAS Total, PI Total, STAXI Anger Expression and WARS Anger Index scales in both conditions *following* the introduction of cognitive-behavioural

anger treatment to the AT group. This pattern is repeated for other outcome measures also. Direct care staffs involvement in the treatment project may have led to positive changes in the way that they responded to patients' anger problems, including those presented by patients in the RC group waiting to enter treatment. That is, the treatment, although designed as an individualised therapy, may have had a 'systemic' effect. Staffs' responses to the Staff Questionnaire (SQ) offer support for this hypothesis.

In addition, participants in the AT group may have transmitted some of their knowledge and skills to others living in the same clinical areas awaiting treatment. The author had direct experience of at least one example of this. A patient in the second cohort of the AT group produced a number of completed anger logs before self-monitoring had been introduced into treatment sessions. The patient explained that a fellow patient on his ward, who had recently completed anger treatment, had given him some spare logs and coached him in how to complete them.

A further possible mechanism that might explain this phenomenon is the impact of AT group participants learning how to cope more effectively with angry situations. If those patients actively receiving treatment were less hostile and angry, then the general levels of provocation and aggression might have been reducing within the enclosed living environments that they shared with RC group participants. This effect, along with those postulated above, could have produced the net effect of the RC group improving on the outcome measures used and so diminishing the significance of any between group differences.

9.2.5.4 Blind Evaluation and Treatment Fidelity Issues

We attempted to maintain the independence of evaluators as far as possible, and they were not involved in the delivery of the treatment. However, within the treatment study design, we were not able to ensure that evaluators were blind to participants' treatment condition and this could have introduced some bias into the obtained results. Although this is a significant methodological problem, it has been suggested that blind evaluation is an unattainable standard in psychological treatment trials (Shapiro, 1996). Detailed interviews with study participants to assess their progress and learn about their experiences inevitably involves evaluators being exposed to information that indicates which condition patients have been in. Also, with regard to staff-ratings of anger and aggression, it is impossible to discount bias based on direct care staffs' knowledge and experience of patients' violent histories.

A structured manual was used to guide treatment delivery. Peer and expert external supervision, completion of client competency checklists, and random review of treatment files by the principal investigator were in place to ensure therapist adherence to the treatment protocol. However, despite these measures, it is possible that some therapeutic effects (or the lack of them) were attributable to individual therapists' characteristics and variations in their application of the protocol. Future studies should ideally involve audiotape recording of treatment sessions, a sample of which would be selected by an independent third party and rated independently for treatment fidelity.

9.2.6 Follow-Up and Rate of Change

Due to ethical constraints preventing a longer baseline period for the RC group, the design of the treatment study meant that the follow-up period was limited to four months. The AT group's scores continued to improve after treatment was terminated on a range of anger outcome measures including NAS Total, the three NAS sub-scales, STAXI Trait-Anger, Anger Expression and its three sub-scales, and the staff-rated WARS Anger Index. There is some limited evidence from other anger outcome research (Chemtob *et al.*, 1997; Rose *et al.*, 2000) that over longer follow-up periods of 12 to 18 months treatment group improvements on anger measure scores are maintained or increased. The same effect can be observed in non-anger CBT outcome research also, along with deterioration in control group scores at nine to 12 months follow-up (Barrowclough *et al.*, 2001; Kuipers *et al.*, 1997).

Long-term improvements in client anger problems could occur for a number of reasons. It may take some time for the treatment effects primed within a short period of therapeutic intervention to consolidate and be manifested in outcome measures and behavioural observations. Also, client anger scores may decrease at post-treatment as a function of the positive experience of the therapeutic process, but they may continue to decrease as a function of clients practising anger-coping skills in vivo and so implementing changes in daily life. It is also possible that therapies of a self-actualising nature encourage and teach clients to continue to improve without the aid of a therapist. Given the obvious ethical difficulties in delaying unduly access to a treatment that could have the effect of reducing risks to self and others (as well as psychological distress), it is difficult to contemplate designing a future study of

this nature with a longer follow-up period to examine whether AT clients continue to improve significantly compared with RC clients stagnation or deterioration. Alternative study designs would need to be considered to investigate this potential effect, as well as the factors that promoted such improvement if it were found to occur.

9.2.7 Anger Treatment Component Analysis

In the current study we were unable to examine which aspects of the cognitive-behavioural anger treatment were effective, or to look at an optimal number of treatment sessions for this type of treatment. The effectiveness of the preparatory phase of treatment in reducing clients' anger was not evaluated directly. However, participants' responses to the PEAT- Preparatory and Treatment Phases questionnaires indicate that the preparatory phase was effective in desensitising patients to, and engaging them in the therapy process in a non-threatening manner. Their responses show that they enjoyed the preparatory phase more than the treatment phase sessions, but they perceived that they benefited more from the treatment phase. Also, the fact that all patients in the treatment condition chose to continue from the preparatory into the treatment phase signals the value of the preparatory sessions in successfully engaging these clients in this form of psychotherapy.

Previous research (see Whitaker, 2001 for a review) has concluded that the most useful aspects of anger treatment with people with learning disabilities are non-cognitive, including self-monitoring, relaxation and skills training. The present study certainly indicates, both in terms of the self-report outcome measures and PEAT

questionnaire responses, that arousal reduction was an effective component of the treatment protocol. However, the skills more specifically related to cognitive remediation aspects of the therapy (such as thought-catching, perspective-taking, and thinking differently about angry situations) were by no means rated by patients as being the most unhelpful. These more qualitative data, the significant pre-post treatment reductions on the NAS Cognitive domain score for the AT group which was maintained at follow-up ($F(1,15) = 8.48$, $p < .02$), along with strong clinical impressions gained by therapists, suggest that this client group can successfully engage in and benefit from an anger treatment that has cognitive remediation as one of its core components. Generally, participants did not find these techniques too difficult or off-putting. However, an important functional component of anger, that is the content of participants' anger cognitions, was not assessed directly in this study. In fact, as Edmondson and Conger (1996) pointed out, this area was not assessed directly in any of the anger treatment studies that they reviewed and this is probably because there is no such measure in the literature. Clearly this is a significant limitation in attempting to evaluate the impact of the cognitive components of anger treatments.

To what extent the cognitive restructuring features of the treatment took hold and contributed to the observed gains cannot, therefore, be resolved in the current study. The issue of the efficacy of the different components of the treatment merits further examination and would require a study design incorporating comparison groups in which participants received particular components plus a combined treatment condition.

9.2.8 Added Value of Anger Treatment?

While the reduction of anger symptoms associated with aggressive behaviour is the primary aim of anger treatment, it is not the sole reason for embarking on this therapeutic approach. Given the association between chronic anger and a range of psychological and physiological disorders, it was hoped that anger treatment would help to improve the psychological and physical welfare of those receiving it. Unfortunately no direct measures of psychopathology or physical health were administered as part of this study. Thus, it is not possible to evaluate the impact of the treatment in these areas – nor would this be easy to achieve within the current study design given the amount of time that would be required to demonstrate such effects against a wait-list control condition.

A further aim of the treatment study was to examine the impact of treatment on direct care staffs' perceptions of their abilities to understand and cope more effectively with clients' anger problems. It would seem from the Staff Questionnaire (SQ) data that the intervention was to some extent successful in this regard. It is to be hoped that this, along with the impact that anger treatment may have had in reducing the levels of hostility and aggression within clinical areas, and the apparent transmission, or diffusion of therapy effects from staff and patients engaged in treatment to those waiting for it, has produced positive systemic treatment effects that benefit clients, staff working with them and the organisation as a whole.

A cost-benefit analysis of the treatment evaluated in this study would require a number of highly complex and debatable economic assumptions and value judgements to be made in order to express a 'yield' in terms of the financial benefit per financial unit of cost. Although treatment decisions depend on costs as well as

the effectiveness of interventions, such a cost-benefit analysis is beyond the scope of this study. However, future studies could attempt to compare treatments in terms of the costs of achieving operationally defined outcomes in order to provide a 'cost-effectiveness' analysis. Such an analysis, unlike a cost-benefit analysis, stops short of attempting to assign financial value to the effects of treatment which would be complex and difficult to achieve in practice.

CHAPTER 10: CONCLUDING REMARKS

It has been widely established that hospital patient violence is a prevalent and costly problem for institutions in Europe and North America. Physical assault behaviour by patients seriously impairs the treatment milieu for all patients, results in restrictions and diminished chances for discharge, constitutes very significant risk for harm among staff, and has considerable financial cost for the institution in workers' compensation claims and employee turnover. To the extent that anger operates as a relevant antecedent variable in the activation of assaults by patients, it can serve as a focus for intervention to remedy a pressing problem for both clinical care staff and hospital managers. Also, insofar that anger is an element of emotional distress in the lives of developmentally disabled patients, and it has been shown to have significant deleterious physical health sequelae, it should be a high psychotherapeutic priority.

The research effort reported in this thesis has achieved to some extent the aims and objectives described at the outset. It demonstrated that the construct of anger has validity and can be reliably assessed in a coherent manner among clients with intellectual limitations and offending backgrounds that might otherwise militate against such measurement. The level of anger in this population is comparable to that found in non-disabled forensic and psychiatric populations and is significantly associated with violent behaviour within the hospital environment. We have also shown that a modified psychotherapeutic approach, with a focus on cognitive re-structuring, can engage and motivate clients to work constructively on developing better self-control over their anger problems. This intervention resulted in significant outcomes on a range of measures that were maintained at follow-up. Further, the

treatment intervention appears to have the additional benefit of impacting positively on direct care-staffs ability to deal with patients' anger problems.

As well as going some way to demonstrate the applicability and value of this particular technology in this setting with this client group, the research reported on here also addresses some more general points. Firstly, it has demonstrated that rigorous empirical research can be conducted successfully with this client group by developing reliable diagnostic and outcome measures (including self-reports of affective states), manualised treatments and adopting study designs and analytic approaches that enable the use of relatively small comparison groups. The results of such research can be added usefully to those from existing studies that have tended to be qualitative and descriptive in nature. Hence, we ought to be able to work towards the goal of bringing our clinical research in line with the contemporary standards expected in psychotherapy outcome research with non-disabled populations.

Secondly, we have demonstrated that research designs that strike a balance between the demands for internal validity required for efficacy studies, and the pressure for external validity needed for most effectiveness studies, can enable research that is helpful both in measuring how effective particular interventions are for specific study samples, and in indicating how generalisable these effects might be under 'usual care' conditions in the wider population from which the sample has been drawn. Such 'hybrid' designs (Wells, 1999) that combine the features of efficacy and effectiveness research allow for evaluations of the benefits of therapeutic interventions for individuals, *and* for the organisation/system within which he or she is operating, and thus they provide better information to guide decisions about use of resources.

Finally, it is suggested that the approach to psychotherapy evaluation described in this programme is feasible and manageable within routine clinical services given adequate levels of resources, and management and organisational support. Therefore, it should be possible to allow our clients with developmental disabilities to access psychological therapies that have been properly evaluated. This would counter the tendency to attribute the failure of interventions that have not been rigorously evaluated with this population to characteristics of the clients (particularly their disability), rather than to the limitations of the treatments or the therapists administering them. This approach leads to more equitable treatment of these clients within health care systems and challenges the orthodoxy that people with developmental disabilities cannot benefit from psychotherapy – or at least not to the same extent as other people.

It is suggested that a more enlightened approach to recognising the emotional needs of people with developmental disability, and to developing effective psychological therapies to meet these needs, would be helpful not only to clients with such needs. It would benefit also the communities within which these people reside and would add significantly to the scientific enquiry that is underway regarding clinical outcomes within the wider mental health field.

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APPENDICES

Spielberger State-Trait Anger Scale (STAXI)
(Northgate Modification)

Name: _____ **Dob:** _____ **Age:**_____

Raters Name: **Date Administered:** _____

Part 1 How I Feel Right Now

Directions

I am going to read to you some things that people sometimes say about themselves. After each one I want you to tell me how you feel **right now**. Remember, there are no right or wrong answers. I want you to give me the answer which you think best shows how you are feeling **right now**.

		Not at all	A little bit	Quite a bit	Very much so
1.	Right now - I am furious (really angry; or in a rage).	1	2	3	4
2.	Right now - I feel irritated (bad tempered; annoyed; or cross).	1	2	3	4
3.	Right now - I feel angry.	1	2	3	4
4.	Right now - I feel like shouting at somebody.	1	2	3	4
5.	Right now - I feel like breaking things (smashing stuff up).	1	2	3	4
6.	Right now - I am mad (very angry; steaming; up a height).	1	2	3	4
7.	Right now - I feel like banging on the table (stamping my feet; slamming the door).	1	2	3	4
8.	Right now - I feel like hitting someone.	1	2	3	4
9.	Right now - I am wound up.	1	2	3	4
10.	Right now - I feel like swearing (effing and blinding).	1	2	3	4

S-Ang (items 1 - 10) =

Part 2 How I Generally Feel

Directions

I am going to read to you some things that people sometimes say about themselves. After each one I want you to tell me how you generally feel - how you feel **most of the time**. Remember, there are no right or wrong answers. Just give me the answer which you think best shows how you feel **most of the time**.

		Almost never	Sometimes	A lot of the time	Almost all of the time
11.	I am quick tempered (short-tempered, have a short-fuse; touchy).	1	2	3	4
12.	I have a fiery temper (lose it altogether; go ballistic).	1	2	3	4
13.	I am a hotheaded person (impulsive; I don't think before I do things).	1	2	3	4
14.	I get angry when I'm slowed down by someone elses mistakes. Eg, you can't finish your job because somebody keeps doing theirs wrong.	1	2	3	4
15.	I feel annoyed if I don't get rewarded for working hard. Eg, you get all your work right but no-one says 'well done'.	1	2	3	4
16.	I fly off the handle (lose my temper quickly).	1	2	3	4
17.	When I get mad (up a height), I say nasty (bad) things.	1	2	3	4
18.	It makes me furious (really angry; in a rage) when I'm criticised (told off) in front of others.	1	2	3	4
19.	When I get frustrated (annoyed; irritated) I feel like hitting someone.	1	2	3	4
20.	I feel furious (really angry; in a rage) if I do a good job but get a poor grade or report for it.	1	2	3	4

T - Ang (items 11 - 20) =

T - Ang/T (items 11, 12, 13,16) =

T - Ang/R (items 14, 15, 18, 20) =

Part 3 When Angry or Furious

Directions

Everyone feels angry or furious from time to time, but people are different in the ways that they handle these feelings. I am going to read to you some ways people say they react or behave when they feel angry or furious. After each one I want you to tell me how often you usually react or behave like this when you are feeling angry or furious. Remember, there are no right or wrong answers. Just give me the answer which you think best shows how you behave.

		Almost never	Sometimes	A lot of the time	Almost all of the time
21.	When I'm angry - I can control my temper	1	2	3	4
22.	When I'm angry - I show my anger	1	2	3	4
23.	When I'm angry - I keep things in (keep things to myself)	1	2	3	4
24.	When I'm angry - I'm patient (don't get annoyed) with others.	1	2	3	4
25.	When I'm angry - I sulk (get in a bad mood)	1	2	3	4
26.	When I'm angry - I keep myself to myself and stay away from other people.	1	2	3	4
27.	When I'm angry - I say sarcastic (insulting) things to other people to try to put them down.	1	2	3	4
28.	When I'm angry - I keep my cool (keep calm; stay in control).	1	2	3	4
29.	When I'm angry - I do things like slam doors.	1	2	3	4
30.	When I'm angry - I get really wound-up inside, but I don't show it.	1	2	3	4
31.	When I'm angry - I control my behaviour.	1	2	3	4
32.	When I'm angry - I argue with others	1	2	3	4
33.	When I'm angry - I hold grudges (have bad thoughts about people) that I don't tell anyone about.	1	2	3	4

		Almost never	Sometimes	A lot of the time	Almost all of the time
34.	When I'm angry - I hit out at whatever is making me furious.	1	2	3	4
35.	When I'm angry - I can stop myself from losing my temper.	1	2	3	4
36.	When I'm angry - I think nasty or bad things about people but I don't say anything.	1	2	3	4
37.	When I'm angry - I am angrier/more furious than I let on.	1	2	3	4
38.	When I'm angry - I calm down (cool down) faster than most people.	1	2	3	4
39.	When I'm angry - I say nasty or bad things.	1	2	3	4
40.	When I'm angry - I try to be tolerant (patient and calm) and not get annoyed with others.	1	2	3	4
41.	When I'm angry - I'm more wound up than other people realise.	1	2	3	4
42.	When I'm angry - I lose my temper.	1	2	3	4
43.	When I'm angry - if someone annoys me, I'm likely to tell them how I feel.	1	2	3	4
44.	When I'm angry - I control (handle) my angry feelings.	1	2	3	4

Ax/In (Items 23, 25, 26, 30, 33, 36, 37, 41) =

Ax/Out (Items 22, 27, 29, 32, 34, 39, 42, 43) =

Ax/Con (Items 21, 24, 28, 31, 35, 38, 40, 44) =

Ax/Ex (Ax/In + Ax/Out - Ax/Con + 16) =

Novaco Anger Scale (NAS)

(Northgate Modification)

The statements below describe things that people think, feel, and do. To what extent are they true for you? For each item indicate whether it is (1) never true, (2) sometimes true, or (3) always true. Use the scale on the right side by putting a circle around the number (1, 2, or 3) that fits your response to the statement.

		Never True	Sometimes True	Always True
1.	When I've been wronged, I will get angry. **- e.g. if someone tells a lie about me, I'll get angry.**	1	2	3
2.	Once something makes me angry, I keep thinking about it. **- e.g. if someone has wound you up, does it stay in your head and you keep going over it.**	1	2	3
3.	Every week I meet someone I don't like.	1	2	3
4.	I know that people are talking about me behind my back.	1	2	3
5.	When something makes me angry I can forget about it and get on with something else.	1	2	3
6.	Some people would say I'm hotheaded. **- e.g. you lose your temper all of a sudden.**	1	2	3
7.	When I get angry, I stay angry for hours (a long time).	1	2	3
8.	My body feels tight, wound up. (i.e. tense)	1	2	3
9.	I walk around in a bad mood.	1	2	3
10.	If I feel myself getting angry, I can calm myself down.	1	2	3
11.	My temper is quick and hot (i.e. fast and strong)	1	2	3
12.	When someone shouts at me, I'll shout back at them.	1	2	3
13.	I have had to be rough with people who bothered me	1	2	3
14.	I feel like smashing things	1	2	3
15.	If I have a problem and feel fed up with it, I try and find an answer.	1	2	3
16.	When I get angry, there's usually a good reason for it.	1	2	3
17.	When something is done wrong to me I find it hard to sleep. **- e.g. if you've had your trust broken by someone, you find it hard to sleep.**	1	2	3
18.	When I don't like someone, I don't care if I hurt their feelings.	1	2	3

		Never True	Sometimes True	Always True
19.	People can be trusted to do what they say. **- e.g. if someone says they're going to do something do you believe them.**	1	2	3
20.	I try and look for the good in other people.	1	2	3
21.	When I get angry, I get really angry	1	2	3
22.	When I think about something that makes me angry, I get even more angry.	1	2	3
23.	I feel agitated and unable to relax (i.e. fidgety, find it hard to sit still).	1	2	3
24.	I get annoyed when someone interrupts me. **- e.g. if you're talking to someone and someone else butts in.**	1	2	3
25.	I can stay calm when put under pressure. **- e.g. if someone is rushing you to get a job done, can you stay calm**.	1	2	3
26.	If someone annoys me, I react and then think about it later. **- e.g. if someone is winding you up, you shout at them and then later think what you should have done.**	1	2	3
27.	If I don't like someone, I'll tell them so.	1	2	3
28.	When I get mad, I can easily hit someone.	1	2	3
29.	When I get angry, I throw or slam things.	1	2	3
30.	When you're having a problem with someone do you speak to the person about it. **- e.g. if someone has told a lie about you, do you try and talk it through with that person.**	1	2	3
31.	If I lose my temper with someone, it's because they deserved it.	1	2	3
32.	When someone makes me angry, I think about getting even. **i.e. do you think about getting someone back**.	1	2	3
33.	If someone cheats me, I'd make them feel sorry. **- e.g. if someone tells everyone a secret about you, would you make them feel sorry for it.**	1	2	3
34.	People pretend their telling the truth, when they're really telling lies.	1	2	3
35.	If someone says something nasty to me I can let it go.	1	2	3
36.	When I get angry, I feel like smashing things.	1	2	3
37.	Some people get angry and get over it, but for me it takes a long time.	1	2	3

		Never True	Sometimes True	Always True
38.	I have trouble sleeping or falling asleep.	1	2	3
39.	A lot of little things bug me.	1	2	3
40.	When I get wound up, I can calm myself down by taking deep breaths.	1	2	3
41.	I have a hot temper that happens really quickly.	1	2	3
42.	Some people need to be told to "get lost".	1	2	3
43.	If someone hits me first, I hit them back.	1	2	3
44.	When I get angry with someone, I take it out on whoever is around. **- e.g. if someone has made you angry, I'll be nasty to other people.**	1	2	3
45.	If I don't agree with someone, I try to say something useful. **- e.g. if someone says something is good and you think it's bad, you try and explain what you think and why you think that.**	1	2	3
46.	I'll get more angry, the more someone annoys me.	1	2	3
47.	I feel like I am getting a raw deal out of life. **- i.e. do you feel what you're getting out of life isn't fair.**	1	2	3
48.	When I don't like somebody, there's no point in being nice to them.	1	2	3
49.	When someone does something nice for me, I wonder about the hidden reason. **- e.g. if someone says something nice to me I wonder why.**	1	2	3
50.	If someone is annoying me, I try to work out why. **- e.g. if someone is winding you up, do you stop and think they might have a reason, like they're having a bad day.**	1	2	3
51.	It makes me really angry is someone makes fun of me.	1	2	3
52.	When I get really angry with someone, I stop talking to them.	1	2	3
53.	I get a headache when someone annoys me.	1	2	3
54.	It bothers me when someone does things the wrong way. **- e.g. if someone lays the table wrong does it annoy you.**	1	2	3
55.	When I'm wound up it goes away by thinking about something calm and relaxing.	1	2	3
56.	When I get angry, I lose my temper really quickly.	1	2	3
57.	When I argue with someone, I keep going until they stop.	1	2	3
58.	Some people need to get knocked around	1	2	3
59.	If someone makes me angry, I'll tell other people about them.	1	2	3
60.	I can walk away from an argument.	1	2	3

Provocation Inventory (PI)

(Northgate Modification)

The following items describe situations that can make someone angry. The scale on the right side is for the degree or amount of anger. For each of these situations below, please indicate the amount of anger that you would feel it actually happened to you. Put a circle around the number in the scale on the right side.

		Not at all angry	A little angry	Fairly angry	Very Angry
1	Being criticised in front of other people for something that you have done. **eg, someone says you've done something wrong in front of all the other patients.**	1	2	3	4
2	Seeing someone bully another person who is smaller or less powerful. **eg, somebody small is being picked on by somebody big.**	1	2	3	4
3	You are trying to concentrate, but someone keeps making a noise. **eg, you are trying to do your job at work and someone else keeps making a lot of noise**	1	2	3	4
4	People who act like they know it all, eg, show offs	1	2	3	4
5	Being slowed down by another person's mistakes. **eg, you are working in the garden and you can't finish your job because somebody keeps doing theirs wrong**	1	2	3	4
6	You are in a queue to get something, and someone pushes in front of you.	1	2	3	4
7	Not being given recognition for doing good work. **eg, you get all your work right at education but no-one says well done**	1	2	3	4
8	You are watching a TV programme, when someone comes along and switches the channel.	1	2	3	4
9	People who don't really listen when you talk to them.	1	2	3	4
10	Getting cold soup or cold vegetables for dinner.	1	2	3	4
11	Having someone look over your shoulder while you are working. **eg. You are at work and someone is watching what you are doing all the time**	1	2	3	4
12	Being overcharged by someone for a repair. **eg, somebody charges you £60 to fix your TV when it should cost £10.**	1	2	3	4
13	You need to get somewhere in a hurry, but you get stuck in traffic.	1	2	3	4

		Not at all angry	A little angry	Fairly angry	Very Angry
14	People who think that they are better than you.	1	2	3	4
15	You are carrying a cup of coffee, and someone bumps into you.	1	2	3	4
16	Someone making fun of the clothes you are wearing.	1	2	3	4
17	Being singled out for correction, when someone else doing the same thing is ignored. **Eg, everyone in your flat does something silly, but you are the only person who gets told off.**	1	2	3	4
18	You make arrangements to do something with a person who backs out at the last minute. **eg, You are meant to be going out with a friend, but at the last minute they tell you that they can't go.**	1	2	3	4
19	People who think that they are always right. **eg, someone who thinks they are never wrong.**	1	2	3	4
20	Just after waking-up in the morning, someone starts giving you a hard time. **eg, you've just got up and somebody starts on at you**	1	2	3	4
21	Someone looks through your things without asking you.	1	2	3	4
22	Being accused of something that you didn't do. **eg, being told that you did something that you didn't do**	1	2	3	4
23	You lend something to someone, and they fail to return it. **Eg, someone borrows a tape from you and they don't give it back.**	1	2	3	4
24	Someone who is always contradicting you. **Eg, someone who always disagrees with you**	1	2	3	4
25	It's mealtime and you are hungry, and someone plays a practical joke on you.	1	2	3	4

WARD ANGER RATING SCALE (WARS)

Patient's Name: ..... **Ward:** .....

Rater's Name: ..... **Date:** .....

Directions: Please rate the patient during the past week for each of the items below:

PART A:

During the past week, has the patient:

Expressed suspicion of others		YES	NO
Blamed someone else for his/her difficulties		YES	NO
Acting impulsively, without self restraint		YES	NO
Had a temper tantrum		YES	NO
Shouted or yelled		YES	NO
***Verbally abused someone**		**YES**	**NO**
***Verbally threatened to attack someone**	**Staff**	**YES**	**NO**
*** " " " " "**	**Patient**	**YES**	**NO**
***Physically attacked someone**	**Staff**	**YES**	**NO**
*** " " "**	**Patient**	**YES**	**NO**
Slammed, threw or deliberately broke something		YES	NO
Talked of suicide		YES	NO
Attempted suicide		YES	NO
Talked of injuring self		YES	NO
Attempted to injure self		YES	NO
Expressed delusional beliefs		YES	NO
Expressed command hallucinations to do harm	To self	YES	NO
	To others	YES	NO

(* These five items can be summed to yield an 'antagonistic behaviour' index.)

PART B: Anger Index

During the past week, to what extent was the patient:

	Not at All	Very little	Some times	Fairly often	Very often
Angry or annoyed	0	1	2	3	4
Irritable or grouchy	0	1	2	3	4
Resistant to suggestions or requests	0	1	2	3	4
Impatient or frustrated	0	1	2	3	4
Tense or uptight	0	1	2	3	4
Agitated or restless	0	1	2	3	4
Bitter or resentful	0	1	2	3	4

EPQ-R SHORT SCALE

(Northgate Modification)

NAME:..... **DATE:**.....

AGE:..... **SEX:**.....

P:	E:	N:	L:

INSTRUCTIONS: Please answer each question by putting a circle around the 'YES' or 'NO' following the question. There are no right or wrong answers, and no trick questions. Work quickly and do not think too long about the exact meaning of the questions. Each question is followed by an example to make the meaning clearer.

PLEASE REMEMBER TO ANSWER EACH QUESTION

1. **Are you often moody?** **YES** **NO**
   e.g. Do you often feel happy then sad soon afterwards?

2. **Does it bother you much what other people think?** **YES** **NO**
   e.g. Imagine that you want to do something but a friend of yours, maybe your girlfriend, asks you not to do it. Would you do it anyway?

3. **Do you talk a lot?** **YES** **NO**
   e.g. When you go out, say to work or the club, do you like to talk to other people a lot?

4. **If you will say you'll do something do you always keep your promise, even when it's hard to?** **YES** **NO**
   e.g. Can you think of a time when you have broken a promise?

5. **Do you ever feel down in the dumps without knowing why?** **YES** **NO**
   e.g. Sometimes do you feel down, upset and depressed without knowing why?

6. **Would owing money to someone worry you?** **YES** **NO**
   e.g. If you borrowed some money, say five or ten pounds, would it worry you if you could not pay it back?

7. **Are you usually busy?** **YES** **NO**
   e.g. Which of these are you most like: someone who is always busy doing something or someone who likes to take things easy and relax?

8. **Have you ever been greedy by helping yourself to more than your fair share of something?** **YES** **NO**
   e.g. Can you think of a time when you have been greedy?

9. **Do lots of things annoy you?** **YES** **NO**
   e.g. Do you find yourself getting annoyed at lots of things on your villa, things like other residents, staff and the food?

10. **Would you take tablets that may be dangerous and make you feel high?** **YES** **NO**
    e.g. Some drugs do funny things to people you may have heard of them, things like Ecstasy, Cannabis and LSD. If offered would you try any of these?

11. **Do you enjoy meeting new people?** **YES** **NO**
e.g. If you go out somewhere new, like a pub, do you enjoy meeting and talking to new people?

12. **Have you ever accused someone else of doing something that was your fault?** **YES** **NO**
e.g. Have you ever got someone into trouble for doing something wrong when it was really your fault?

13. **Are your feelings easily hurt?** **YES** **NO**
e.g. If someone says something nasty to you do you get upset easily?

14. **Do you prefer to do things your way even if that means you break the rules?** **YES** **NO**
e.g. If you really want to see your girlfriend but have been told by your family or the staff that you can't, would you go and see her anyway?

15. **Can you relax and have a good time at a lively party?** **YES** **NO**
e.g. If you go to a lively party, do you have a good time or do you often feel awkward and unable to enjoy yourself?

16. **Are all your habits good ones?** **YES** **NO**
e.g. Most people have good habits and bad habits. Are all your habits good ones?

17. **Do you find that a lot of the time you feel fed up?** **YES** **NO**
e.g. Do you find that a lot of the time you are in a 'bad fettle'?

18. **Do you think that being polite and clean is important?** **YES** **NO**
e.g. Does it bother you if you are rude and scruffy?

19. **Do you usually take the first step in making new friends?** **YES** **NO**
e.g. If you are in a group of new people do you wait for someone to talk to you or do you go over and try to make friends?

20. **Have you ever taken something that belonged to someone else?** **YES** **NO**
e.g. Have you ever nicked anything?

21. **Are you often nervous?** **YES** **NO**
e.g. Do you find that a lot of the time you are nervous and feel shaky and jumpy inside?

22. **Do you think that marrying someone is old fashioned?** **YES** **NO**
e.g. Do you think that people who get married are silly because it is far better to just live with your girlfriend?

23. **Do other people think that having you at their party makes it more fun?** **YES** **NO**
e.g. If you go to a boring party where everyone is sitting around and being very quiet can you get people talking and dancing so that the party is more fun?

24. **Have you ever broken or lost something that belonged to someone else?** **YES** **NO**
e.g. a cassette or a radio

25. **Do you worry about lots of things?** **YES** **NO**
e.g. Do you find yourself worrying about lots of things such as case reviews or things that you've done?

26. **Do you like to get on with people?** **YES** **NO**
e.g. If someone like a member of staff or workmate asks you to do something do you usually get on and do it quite happily?

27. **When you are with a group of people do you usually keep quiet?** **YES** **NO**
e.g. If you are at the pub with a group of friends do you do lots of talking and mixing or do you tend to keep quiet?

28. **Does it bother you if you have made a mistake at work?** **YES** **NO**
e.g. Would you be upset if you kept making mistakes in your work say at school or the ATC?

29. **Have you ever said anything bad or nasty about anyone?** **YES** **NO**
e.g. Have you ever slagged someone off to other people?

30. **Do you sometimes feel all tense and shaky inside?** **YES** **NO**
e.g. Do you often find that you feel uptight and the muscles in your neck, shoulders and face feel all tight and knotted?

31. **Do you think that saving money for when you retire is silly and a waste of time?** **YES** **NO**
e.g. Some people like to save money rather than spending it all; often this is because they want to have a little extra for when they are old. Do you think this is a good idea or would you rather spend your money now?

32. **Do you like talking with people?** **YES** **NO**
e.g. Do you like being with people?

33. **As a child were you ever cheeky to your parents?** **YES** **NO**
e.g. Did you ever swear or answer back to your parents?

34. **Do you worry for a long time if you feel you have made a fool of yourself?** **YES** **NO**
e.g. Say you do something that is embarrassing like making a fool of yourself in front of your girlfriend, do you find that you worry about what you have done for a long time?

35. **Do you try to be polite to people?** **YES** **NO**
e.g. Do you try to stop yourself from being rude to people?

36. **Do you usually want exciting things to happen?** **YES** **NO**
e.g. Do you prefer to have lots of people and exciting things happening around you, or do you prefer to be quiet and alone in your room?

37. **Have you ever cheated at a game?** **YES** **NO**
e.g. Have you ever broken the rules of a game so you could win?

38. **Do you often get nervous before doing something?** **YES** **NO**
e.g. Do you find that sometimes you get so worried about something that it stops you from doing it?

39. **Would you enjoy it if other people were afraid of you?** **YES** **NO**
e.g. Would you get a buzz knowing that someone was scared of you?

40. **Have you ever done something to someone you shouldn't have because it was unfair?** **YES** **NO**
e.g. Have you ever got someone to make you a cup of tea or go and fetch something because you were too lazy?

41. **When you are with other people do you let them do most of the talking?** **YES** **NO**
e.g. When you go out with a group of people to the pub or club, do you tend to keep quiet and not say much? Or are you the sort of person that talks a lot?

42. **Do you often feel lonely?** **YES** **NO**
e.g. Do you often feel that you have no friends or people that you can talk to?

43. **Is it important to stick to the rules rather than do your own thing?** **YES** **NO**
e.g. Is it best to do what everyone else does or do you prefer to do your own thing?

44. **Do you think that other people would say you have lots of energy?** **YES** **NO**
e.g. Think about how the staff and your friends think of you; do you think that these people would say that you are lively and have lots of energy, or do you think they would say that you are quiet?

45. **Do you always do what you tell other people is the right thing to do?** **YES** **NO**
e.g. An example of this might be telling someone not to shout and then later on shouting yourself.

46. **Do you often feel guilty about things?** **YES** **NO**
e.g. Do you often feel upset and worried about things that you have done?

47. **Do you sometimes leave until tomorrow things that you should do today?** **YES** **NO**
e.g. If you have some homework do you leave it until the last minute instead of doing it when you have more time?

48. **Can you make a boring party into a good one?** **YES** **NO**
e.g. Do people think that having you at their party makes it more fun?

ADULT IVE
(Northgate Modification)

NAME: ..... **DATE:** .....

AGE: ..... **SEX:** .....

I:	V:	E:

INSTRUCTIONS: Please answer each question by putting a circle around the 'YES' or 'NO' following the question. There are no right or wrong answers, and no trick questions. Work quickly and do not think for too long about the exact meaning of the questions. Each question is followed by an example to make the meaning clearer.

PLEASE REMEMBER TO ANSWER EACH QUESTION

1. **Would you enjoy water skiing?** **YES** **NO**
   e.g. being pulled very fast behind a speedboat on skis?

2. **Usually do you prefer to stick to brands you know are reliable, rather than trying new ones on the chance of finding something better?** **YES** **NO**
   e.g. Do you prefer to buy things you know are good, or do you like to try new things that might be better?

3. **If somebody you didn't know was all on their own would you feel sorry for them?** **YES** **NO**
   e.g. If you were at a party and saw somebody all on their own would you think about going to talk to them?

4. **Do you quite enjoy taking chances?** **YES** **NO**
   e.g. When betting on horses, you don't know that you will win but some people quite enjoy taking a chance. Are you the sort of person who quite enjoys taking a chance?

5. **If your friend has a problem do you get very deeply involved?** **YES** **NO**
   e.g. If a friend is in trouble do you feel worried for them and try to help them?

6. **Would you enjoy parachute jumping?** **YES** **NO**
   e.g. jumping out of an aeroplane and opening a parachute

7. **Do you often buy things which you hadn't planned to buy?** **YES** **NO**
   e.g. When shopping do you often see and decide to buy things which you hadn't actually gone looking to buy?

8. **Do unhappy people who are sorry for themselves annoy you?** **YES** **NO**
   e.g. Do miserable people who are always complaining get on your nerves?

9. **Do you generally do and say things without stopping to think?** **YES** **NO**
   e.g. Do you usually say or do things without thinking about them first.

10. **Do you tend to get nervous when others around you seem to be nervous?** **YES** **NO**
    e.g. If you are with a group of people who are nervous do you find that you also get nervous?

11. **Do you think hitch-hiking is too dangerous a way to travel?** **YES** **NO**
    e.g. Do you think its safe or is it dangerous to hitch a lift at the side of a road?

12. **Do you find it silly for people to cry out of happiness?** **YES** **NO**
e.g. Some people cry when they are happy. Do you think this is silly?

13. **Do you like diving off the high board?** **YES** **NO**
e.g. At the swimming baths there's usually a few diving boards. Do you like diving off the highest one?

14. **Does your mood go up and down depending on who you are with?** **YES** **NO**
e.g. Does your mood change, depending on whether you are with happy or sad people?

15. **Are you the sort of person that does things without stopping to think?** **YES** **NO**
e.g. Do you often say or do things without really thinking first about what you are doing?

16. **Do you enjoy doing new and exciting things even if they are a little frightening and unusual?** **YES** **NO**
e.g. Do you enjoy doing things that you've never done before, even if they are a little bit dangerous and frightening?

17. **Does it affect you very much when one of your friends seems upset?** **YES** **NO**
e.g. If a friend is upset, do you feel upset as well?

18. **Before you do something do you give it a lot of thought beforehand?** **YES** **NO**
e.g. Before doing anything, like going to the club or buying a record, do you think carefully about it?

19. **Would you like to learn to fly an aeroplane?** **YES** **NO**

20. **Do you ever get really into the feelings of a character in a film or book?** **YES** **NO**
e.g. If you are watching a film do you ever find that you can really understand how the characters are feeling?

21. **Do you often decide to do things suddenly?** **YES** **NO**
e.g. Do you plan to go to the club earlier on in the day or do you just decide at the last minute and then go?

22. **Do you ever get very upset when you see someone cry?** **YES** **NO**
e.g. If you see someone crying, do you sometimes feel like crying as well?

23. **When you talk to other people do you think about what you are going to say beforehand?** **YES** **NO**
e.g. If you say something nasty to another person do you plan what you are going to say?

24. **Do you often say you will do something then later wish you could get out of it?** **YES** **NO**
e.g. An example of this might be saying that you wanted to take part in the sports day, then later on deciding that you really didn't want to be in it.

25. **Do you get so excited by new ideas that you never think of possible problems?** **YES** **NO**
e.g. Do you often get so excited by things, for example a new girlfriend or a new hobby, that you never think of what problems there might be?

26. **Do you find it hard to understand people who risk their lives climbing mountains?** **YES** **NO**
e.g. Do you think people who risk their lives climbing up high mountains are mad?

27. **If you have to make your mind up about something do you think about other people's feelings?** **YES** **NO**
e.g. If you have to make your mind up about something are you bothered how your decision might affect other people?

28. **Do you sometimes like doing things that are a bit frightening?** **YES** **NO**
e.g. Do you sometimes enjoy doing frightening things like going on the big rides at the fair?

29. **Do you have to try hard to keep out of trouble?** **YES** **NO**
e.g. If you are tempted to do something wrong (*possibly give an example*) do you have to try really hard to stop yourself doing it?

30. **Do you become more annoyed than upset when you see someone cry?** **YES** **NO**
e.g. When you see someone cry, do you tend to get annoyed with them or do you feel upset as well?

31. **Do you think that almost everything enjoyable is against the law?** **YES** **NO**
e.g. Do you think that all the enjoyable and good fun things to do are against the rules, things like fast driving and taking drugs?

32. **Generally do you prefer to enter a cold swimming pool slowly rather than jumping straight in?** **YES** **NO**
e.g. If you were going into a really cold swimming pool would you do it slowly, or jump straight in?

33. **Are you often surprised at the way people act when you do or say something?** **YES** **NO**
e.g. When you say or do something are you often surprised by what other people do?

34. **Would you enjoy the sensation of skiing very fast down a high mountain slope?** **YES** **NO**
e.g. Do you think you would enjoy skiing very fast down a snowy mountain slope?

35. **Do you like watching people open presents?** **YES** **NO**
e.g. Like at Christmas time do you enjoy watching other people opening their presents, or are you only interested in seeing what you have got?

36. **Do you think that the best nights out are unplanned?** **YES** **NO**
e.g. Which of these is more like you; someone who likes to decide where they are going ages before they go, or the sort of person who leaves things until the last minute?

37. **Would you like to go scuba diving?** **YES** **NO**
e.g. Would you like to try diving under the sea with oxygen bottles and stuff to help you breathe?

38. **Would you find it very hard to break bad news to someone?** **YES** **NO**
e.g. If somebodys relative (mother or brother) was ill or had had an accident, would you find it hard to tell them about it?

39. **Do you enjoy fast driving?** **YES** **NO**
e.g. If you are in a car that's going really fast do you like it?

40. **Do you usually work quickly without bothering to check?** **YES** **NO**
e.g. At work do you do your jobs fast and move onto the next job without looking at the last one?

41. **Do you often change your interests and hobbies a lot?** **YES** **NO**
e.g. Do you start doing one thing, say a jigsaw then get bored with it quickly and move on to do something else?

42. **Before making up your mind about something, do you think of all the good and bad points?** **YES** **NO**
e.g. For example, before going out with a girl do you think of the good and bad points about her?

43. **Are you interested if your friends tell you their problems?** **YES** **NO**
e.g. If a friend tells you their troubles do you listen and try to help them?

44. **Would you like to go pot-holing?** **YES** **NO**
e.g. the sport where you climb down into the ground and explore caves.

45. **Would you be put off a job if it was a bit dangerous?** **YES** **NO**
e.g. Working at the top of really high buildings is a dangerous job; would you fancy doing it, or not?

46. **Do you prefer to think for a while, perhaps overnight, before making up your mind about something?** **YES** **NO**
e.g. If you have to make up your mind about something, say whether or not you want to go out with someone, do you like to think about things overnight and then make up your mind in the morning?

47. **When people shout at you do you shout back?** **YES** **NO**
e.g. If someone, another resident or staff, was shouting at you would you shout back or stay quiet?

48. **Do you feel sorry for very shy people?** **YES** **NO**
e.g. Some people find it hard to talk to other people and feel shy; do you feel sorry for people like that?

49. **Are you happy when you are with a cheerful group and sad when the others are glum?** **YES** **NO**
e.g. Are you happy when you are with a group of cheerful people and sad when other people around you are sad?

50. **Do you usually make up your mind quickly?** **YES** **NO**
e.g. If someone asks you to decide between two things would you usually take your time or decide quickly?

51. **Can you imagine what it would be like to be very lonely?** **YES** **NO**
e.g. Do you ever worry about being all on your own without any friends or family?

52. **Do you get worried when other people are worried and panicking?** **YES** **NO**
e.g. If other people are all wound up and uptight do you start feeling the same?

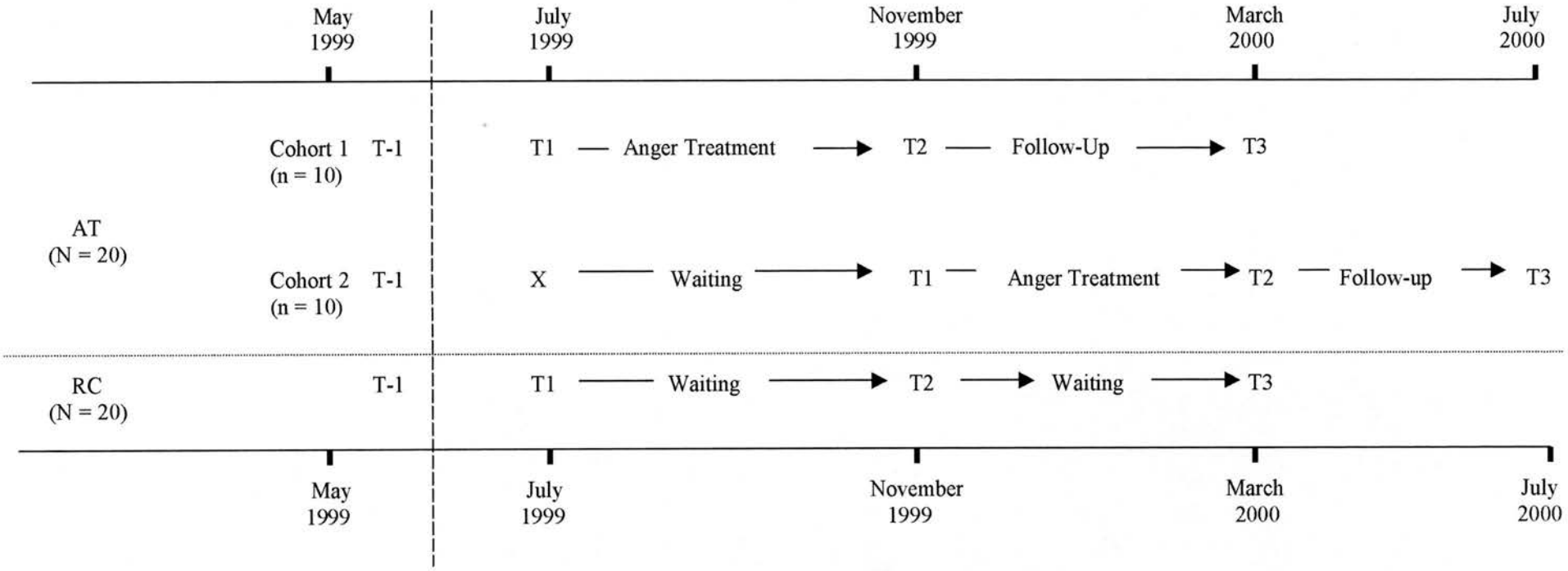
ADULT NOWICKI-STRICKLAND INTERNAL/EXTERNAL SCALE (ANSIE)
(Northgate Modification)

We are trying to find out what people in your situation think about certain things. We want you to answer the following questions the way *you* feel. There are no right or wrong answers. Don't take too much time answering any one question, but do try to answer them all.

1.	Do you believe that most problems will solve themselves if you just don't mess around with them?	YES	NO
2.	Do you believe that you can stop yourself from catching a cold?	YES	NO
3.	Are some people just born lucky?	YES	NO
4.	Most of the time do you feel that getting good grades means a great deal to you?	YES	NO
5.	Are you often blamed for things that just aren't your fault?	YES	NO
6.	Do you believe that if somebody works hard enough he or she can achieve anything they want to?	YES	NO
7.	Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway?	YES	NO
8.	Do you feel that if things start out well in the morning it is going to be a good day no matter what you do?	YES	NO
9.	Do you feel that most of the time staff listen to what their patients have to say?	YES	NO
10.	Do you believe that wishing can make good things happen?	YES	NO
11.	When you get punished does it usually seem it's for no good reason at all?	YES	NO
12.	Most of the time do you find it hard to change a friend's mind/opinion?	YES	NO
13.	Do you think that cheering more than luck helps a team to win?	YES	NO
14.	Did you feel that it was nearly impossible to change staffs' minds about anything?	YES	NO
15.	Do you believe that staff should allow people to make most of their own decisions?	YES	NO
16.	Do you feel that when you do something wrong there's very little you can do to make it right?	YES	NO
17.	Do you believe that most people are just born good at sports?	YES	NO
18.	Are most of the other people your age better than you are?	YES	NO
19.	Do you feel that one of the best ways to handle most problems is just not to think about them?	YES	NO
20.	Do you feel that you have a lot of choice in deciding who your friends are?	YES	NO

21.	If you find a four-leaf clover, do you believe that it might bring you good luck?	YES	NO
22.	When you were at school did you often feel that whether you did your homework had much to do with what kind of marks you got?	YES	NO
23.	Do you feel that when someone decides to hit you there's little you can do to stop him or her?	YES	NO
24.	Have you ever had a good-luck charm?	YES	NO
25.	Do you believe that whether or not people like you depends on how you act?	YES	NO
26.	Do staff usually help if you asked them to?	YES	NO
27.	Have you felt that when people are angry with you it is usually for no reason at all?	YES	NO
28.	Most of the time, do you feel that you can change what might happen tomorrow by what you do today?	YES	NO
29.	Do you believe that when bad things are going to happen they just are going to happen no matter what you try to do to stop them?	YES	NO
30.	Do you think that people can get their own way if they just keep trying?	YES	NO
31.	Most of the time do you find it useless to try to get your own way at home/on the ward?	YES	NO
32.	Do you feel that when good things happen they happen because of hard work?	YES	NO
33.	Do you feel that when somebody wants to be your enemy there's little you can do to change matters?	YES	NO
34.	Do you feel that it's easy to get friends to do what you want them to?	YES	NO
35.	Do you usually feel that you have little to say about what you get to eat at home/on the ward?	YES	NO
36.	Do you feel that when someone doesn't like you there's little you can do about it?	YES	NO
37.	Do you usually feel that it is useless to try hard at work because most other people are clearly better than you are?	YES	NO
38.	Are you the kind of person who believes that planning ahead makes things turn out better?	YES	NO
39.	Most of the time, do you feel that you have little to say about what your family decides to do?	YES	NO
40.	Do you think it's better to be smart than to be lucky?	YES	NO

RESEARCH DESIGN AND PROCEDURAL PLAN FOR ANGER TREATMENT STUDY



AT = Anger Treatment Group
RC = Routine Care Waiting-list Control Group
T-1 = Screening Assessment
T1 = Pre-Treatment Assessment
T2 = Post-Treatment Assessment
T3 = 4-Month Follow-Up Assessment
X = No Assessment

Northgate & Prudhoe NHS Trust

CONSENT FORM II for treatment

(To be completed before pre-treatment preparation sessions begin)

Name of the Research Project: A Controlled Trial of Anger Treatment for Learning Disabled Offenders

Name of the Researchers: John Taylor, Consultant Clinical Psychologist
Bruce Gillmer, Consultant Clinical Psychologist
Alison Robertson, Consultant Clinical Psychologist
Ian Thorne, Forensic Psychologist

• I have read, or had read to me, Leaflet 2 explaining the research.	Yes/No
• I have had the project, and the meaning of confidentiality, explained to me by: i) .....(psychologist) and ii) .....(my named nurse)	Yes/No
• I have been given a copy of this consent form.	Yes/No
• I agree to take part in the research project.	Yes/No
• I understand that the details of what is talked about in the treatment sessions are confidential (within the limits explained in the information leaflet).	Yes/No
• I have been told that I can stop doing the treatment sessions at any time, without giving a reason, and this will not affect my treatment in the hospital in future.	Yes/No

I can confirm that I have explained to the participant (patient) the nature of the project and have given adequate time to answer questions about it.

Signed:..... (patient) **Name(printed):.....**

Signed:.....(named nurse) **Name (printed):.....**

Signed:.....(psychologist) **Name (printed):.....**

Date:.....

Northgate & Prudhoe NHS Trust

CONSENT FORM III
for treatment

(To be completed following pre-treatment preparation sessions and before treatment begins)

Name of the Research Project: A Controlled Trial of Anger Treatment for Learning Disabled Offenders

Name of the Researchers: John Taylor, Consultant Clinical Psychologist
Bruce Gillmer, Consultant Clinical Psychologist
Alison Robertson, Consultant Clinical Psychologist
Ian Thorne, Forensic Psychologist

• I have completed the anger treatment preparation sessions with .....(psychologist)	Yes/No
• I understand what the anger treatment sessions will involve if I agree to carry on.	Yes/No
• I have been given a copy of the consent form.	Yes/No
• I agree to take part in the anger treatment sessions.	Yes/No
• I understand that the details of what is talked about in the treatment sessions are confidential (within the limits explained in the information Leaflet 2).	Yes/No
• I have been told that I can stop doing the treatment sessions at any time, without giving a reason, and this will not affect my treatment in hospital in future.	Yes/No

I can confirm that I have explained to the participant (patient) the nature of the treatment and have given adequate time to answer questions about it.

Signed:..... (patient) **Name(printed):.....**

Signed:.....(psychologist) **Name (printed):.....**

Signed:.....(named nurse) **Name (printed):.....**

Date:.....

Northgate & Prudhoe NHS Trust

FORENSIC PSYCHOLOGY SERVICE

Will you help us with our research?

Leaflet 2
(for patients being offered treatment)

Research about what treatment helps patients who sometimes feel angry and lose their temper.

Who are we?

We are psychologists who work at Northgate Hospital.

What are we doing?

We are trying to find out what treatment can help patients at Northgate Hospital who feel angry and sometimes find it hard to control their temper.

How do we do this?

We have already talked to most of the patients, including you, living in the secure wards at Northgate Hospital about any problems they have with angry feelings.

What do we want to do next?

For some of the patients we have talked to about their angry feelings, we would like to offer them some treatment which we hope will help them now, and in the future.

What does this treatment involve?

This treatment involves one of the psychologists coming to see you once or twice a week for about an hour each time. During these sessions the psychologist will talk to you about the things that make you feel angry and how you try to handle this. The psychologist will then discuss with you some different ways of coping with these feelings so that you can handle angry situations better.

Do I have to take part in this research?

No, it is your choice. The psychologists are offering you the chance to do this treatment because we think it will help you. It will only work if you think it will help also. If you do not want to take part this will not affect your treatment in the future. If you agree and then change your mind later that will be alright as well.

What happens next if I do take part?

If you do agree to take part then the psychology assistant working with us will come to see you in the near future. The assistant will ask you again about the sorts of things that make you feel angry and how you handle these feelings. Then the psychologist will come to see you regularly and will begin by explaining the treatment, what it involves and how it works. The psychologist will see you regularly for about 3 or 4 months (up to 16 weeks).

What happens when the treatment finishes?

At the end of the treatment sessions we hope that you will be better at handling and coping with angry feelings. The assistant psychologist will visit you occasionally – about once every 3 – 4 months – for about 12 months (1 year) to ask you about how you are getting on.

What happens to the information I give to the psychologists?

Any information you give to the psychologists during the assessment and treatment sessions will be dealt with in the same way as other information about your treatment. This means that the details of what you discuss with the psychologists will not usually need to be passed on to anybody else. However, if you did tell the psychologists about any plans to do things which could cause harm to yourself or other people this information would need to be passed on to nursing staff, and possibly to your Responsible Medical Officer (Doctor) also. Usually though the psychologists will let the other members of the team involved in your care know how you are getting on with the treatment generally by preparing reports for your case reviews in the normal way.

As well as this the psychologists will be looking at how you and other patients have got on with this treatment to see if it will help other patients with anger problems in the future. For this part of the project your name will not be mentioned and other people will not get any information about you personally.

If you would like some more information about this research project, or would like to talk about it some more please contact:

John Taylor,
Consultant Clinical Psychologist,
Psychology Department,
Northgate Hospital.
Telephone: 01670 394226, hospital extension no. 4226.

Northgate & Prudhoe NHS Trust

CONSENT FORM I
for continued monitoring / assessment

(To be completed before any further assessment of patients waiting for treatment)

Name of the Research Project: A Controlled Trial of Anger Treatment for Learning Disabled Offenders

Name of the Researchers: John Taylor, Consultant Clinical Psychologist
Bruce Gillmer, Consultant Clinical Psychologist
Alison Robertson, Consultant Clinical Psychologist
Ian Thorne, Forensic Psychologist

• I have read, or had read to me, Leaflet 1 explaining the research.	Yes/No
• I have had the project, and the meaning of confidentiality, explained to me by: .....(psychologist)	Yes/No
• I understand that while I am waiting for treatment the psychologist will visit me occasionally to talk to me about my angry feelings and assess them.	Yes/No
• I have been given a copy of this consent form.	Yes/No
• I agree to take part in the research project.	Yes/No
• I understand that the details of what is talked about in the assessment sessions are confidential (within the limits explained in the information leaflet.)	Yes/No
• I have been told that I can stop doing the assessment sessions at any time, without giving a reason, and this will not affect my teatment in the hospital in future.	Yes/No

I can confirm that I have explained to the participant (patient) the nature of the project and have given adequate time to answer questions about it.

Signed:..... (patient) **Name(printed):.....**

Signed:..... (psychologist) **Name (printed):.....**

Signed:..... (named nurse) **Name (printed):.....**

Date:.....

Northgate & Prudhoe NHS Trust

FORENSIC PSYCHOLOGY SERVICE

Will you help us with our research?

Leaflet 1
(for patients waiting for treatment)

Research about what treatment helps patients who sometimes feel angry and lose their temper.

Who are we?

We are psychologists who work at Northgate Hospital.

What are we doing?

We are trying to find out what treatment can help patients at Northgate Hospital who feel angry and sometimes find it hard to control their temper.

How do we do this?

We have already talked to most of the patients, including you, living in the secure wards at Northgate Hospital about any problems they have with angry feelings.

What do we want to do next?

For some of the patients we have talked to about their angry feelings, we would like to offer them some treatment which we hope will help them now, and in the future.

We would also like to offer you this treatment, but because we can only work with so many people at a time, we need to ask you to wait for a while before we can begin.

Do I have to take part in this research?

No, it is your choice. The psychologists are offering you the chance to do this treatment because we think it will help you. It will only work if you think it will help also. If you do not want to take part this will not affect your treatment in the future. If you agree and then change your mind later that will be alright as well.

What happens next if I do take part?

If you do agree to take part then the psychologist will come to see you occasionally - about every 12 weeks - to talk to you about how you are getting on with any angry feelings and to assess them. This will happen until it is your turn for treatment. At that time we will explain in more detail what it involves and ask you if you want to continue with it.

What happens to the information I give to the psychologists?

Any information you give to the psychologists during the assessment and treatment sessions will be dealt with in the same way as other information about your treatment. This means that the details of what you discuss with the psychologists will not usually need to be passed on to anybody else.

However, if you did tell the psychologists about any plans to do things which could cause harm to yourself or other people this information would need to be passed on to nursing staff, and possibly to your Responsible Medical Officer (Doctor) also. Usually though the psychologists will let the other members of the team involved in your care know how you are getting on with the treatment generally by preparing reports for your case reviews in the normal way.

As well as this the psychologists will be looking at how you and other patients have got on with this treatment to see if it will help other patients with anger problems in the future. For this part of the project your name will not be mentioned and other people will not get any information about you personally.

If you would like some more information about this research project, or would like to talk about it some more please contact:

John Taylor,
Consultant Clinical Psychologist,
Psychology Department,
Northgate Hospital.
Telephone: 01670 394226, hospital extension no. 4226.

CONTENTS AND AIMS OF ANGER TREATMENT SESSIONS

I. PREPARATORY PHASE OF TREATMENT (6 SESSIONS)

Session 1 - Explaining the purpose of anger treatment

- To orientate the patient to the purpose of anger treatment, and the preparatory phase in particular, in a non-threatening style.
- To encourage the patient to discuss the treatment openly and thereby begin to develop a collaborative working relationship.
- To discuss and agree ground rules and boundaries within which this work can take place.
- To introduce the concept of relaxation strategies as a means of reducing anger arousal.
- To introduce the notion of homework exercises as one way of carrying over learning between sessions and beginning to take some personal responsibility.

Session 2 - Feeling angry is OK

- To explain that anger is a normal emotion which everybody experiences from time to time.
- To indicate to the patient that their feelings of anger are no different to other peoples.
- To explore in a preliminary manner different coping strategies people can use when angry.
- To introduce the concept of self-monitoring of angry feelings and how these can be recorded.
- To explore various relaxation strategies as a means of reducing anger arousal.

Session 3 - Understanding our own and other peoples feelings

- To help patients to recognise and identify basic emotional states in other people, including happiness, sadness and anger.
- To increase awareness of the situational/contextual component of the development of various emotional states.
- To introduce the role cognitions play in the induction of different emotions and behavioural responses to situations.
- To explore with the patient how thoughts and feelings are linked with reference to their own emotional state.
- To develop relaxation coupled with imagery as a means of reducing anger arousal.

Session 4 - How to control the physical feelings of anger

- To help patients understand how high levels of stress affects thinking and behaviour.
- To discuss and explore the physical response to high levels of stress.
- To consider in detail how relaxation can counteract the physical arousal associated with high levels of stress and so increase self-control.
- To further develop relaxation coupled with imagery as a means of reducing anger associated with self-recorded incidents.
- To introduce the concept of self-instruction as a means of facilitating self-control.

Session 5 - Reasons for changing the way we cope with angry feelings

- To encourage the patient's commitment to and motivation for anger treatment.
- To explore with the patient the costs and benefits of anger and aggression both in the short and longer term.
- To help the patient to understand that the benefits of developing self-control over anger and aggression outweigh those gained by continuing to be angry and aggressive.
- To assess the patients preparedness and motivation for anger treatment.
- To further develop relaxation coupled with imagery, using self-instruction, as a means of reducing anger arousal.

Session 6 Looking back at the Preparatory sessions and looking forward to what comes next- (review)

- To review with the patient the aims and the content of the preparatory phase sessions.
- To receive feedback on the preparatory phase through patients' evaluation of the sessions.
- To discuss with the patient whether they wish to continue with anger treatment beyond the preparatory phase.
- To further develop relaxation strategies involving self-instruction, controlled breathing and use of imagery as a means of reducing anger arousal.
- To assess the patients' competencies in a range of areas covered during the preparatory phase sessions.

II. TREATMENT PHASE SESSIONS (12 SESSIONS)

Session 7 - Introduction to the Treatment phase of anger treatment

- To review briefly the preparatory phase of treatment, focusing on what anger treatment is about and motivation for change.
- To re-orientate the patient to the purpose of anger treatment, and the treatment phase in particular, in a non-threatening and collegial style.
- To carry out an analysis of the patient's anger problem and reach a shared preliminary formulation of treatment needs.
- To re-introduce self-monitoring of anger problems and relaxation strategies to reduce anger arousal.

Session 8 - Building an anger hierarchy

- To refine the preliminary *'external events x internal processes x behavioural responses'* analysis and formulation started in the last session.
- To begin to construct a hierarchy of anger incidents to be used in the stress inoculation procedure in future sessions.
- To introduce the concept of *'thought catching'* as a means of increasing awareness of self-talk (internal dialogue).
- To expose the patient to *abbreviated progressive relaxation (APR)* as a technique for deepening the effects of relaxation.

Session 9 - Introduction to stress inoculation

- To complete the construction of the *hierarchy of anger incidents* to be used in the stress inoculation procedures.
- To develop the patients understanding of *thought-catching* as a means of increasing awareness of self-talk (internal dialogue).
- To rehearse the *abbreviated progressive relaxation (APR)* exercises prior to personal practice between sessions.
- To introduce the *stress inoculation procedure* as a means of improving the patients ability in coping with anger situations.

Session 10 - Beginning cognitive re-structuring

- To introduce the concepts of *expectations and appraisals (judgements)* as cognitive processes that can cue anger in certain situations. To begin *cognitive re-structuring* using material collected by patients in their Anger Logs.
- To develop the *stress inoculation* procedures began in the last session.
- To rehearse *abbreviated progressive relaxation (APR)* and review practice of these exercises between sessions.

Session 11 - Developing cognitive re-structuring

- To work on the concepts of *attentional focus, expectations and appraisals* as cognitive processes that can cue anger in certain situations.
- To develop *cognitive re-structuring* using material collected by patients in the Anger Logs.
- To introduce the concept of *'perspective-taking'* to enhance appraisal modification.
- To develop further *stress inoculation* procedures.

Session 12 - Perspective-taking and role-playing

- To enhance cognitive restructuring by developing concept of *perspective-taking* as an effective means of modifying appraisals. To continue to develop further *stress inoculation* procedures to improve imaginal coping in anger situations.
- To introduce *role-playing* as a technique for practising behavioural coping skills previously rehearsed in imagination.

Session 13 - Using self-instructions effectively

- To develop cognitive re-structuring incorporating perspective-taking and re-introducing the notion of *self-instructions.*
- To continue to develop further *stress inoculation* procedures by incorporating and rehearsing the use of *self-instructions.*
- To develop *role-playing* as a technique for practising behavioural coping skills previously rehearsed in imagination.
- To introduce the idea of dealing with anger situations effectively by *communicating constructively (problem-solving approach).*

Session 14 - Problem-solving through effective communication

- To further develop *cognitive re-structuring* incorporating *perspective-taking* and *self-instructions.*
- To continue to develop further *stress inoculation* procedure incorporating *self-instructions* and *effective communication.*
- To develop further *role-playing* as a technique for practising *behavioural coping skills* previously rehearsed in imagination.

Session 15 - Development of problem-solving through effective communication

- To further develop *cognitive re-structuring* incorporating *perspective-taking* and *self-instructions.*
- To develop skills in dealing with anger situations effectively by *communicating constructively (problem-solving approach).*
- To continue to develop further *stress inoculation* procedure incorporating *self-instructions* and *effective communication.*
- To develop further *role-playing* as a technique for practising *behavioural coping skills* previously rehearsed in imagination.

Session 16 - Dealing with rumination & escalation

- To further develop *cognitive re-structuring* incorporating *perspective-taking* and *self-instructions.*
- To further develop skills in dealing with anger situations effectively by *communicating constructively (problem-solving approach).*
- To introduce the concepts of *rumination and escalation* which can work against self-control of anger.
- To continue to develop further *stress inoculation* procedures including *imaginal* and *role-play* exposures to anger provoking situations.

Session 17 - Integration of skills & dealing with repeated provocation

- To further develop *cognitive re-structuring* incorporating *perspective-taking* and *self-instructions.*
- To discuss how the sequential *skills* involved in dealing with anger situations need to be *integrated* in order to be effective.
- To further develop skills in dealing with anger situations effectively by *communicating constructively (problem-solving approach).*
- To introduce the concept of *repeated provocation* and how this can be dealt with.
- To continue to develop further *stress inoculation* procedures including *imaginal* and *role-play* exposures to anger provoking situations.

Session 18 - Review & evaluation of anger treatment phase

- To consolidate the patients *personal script* for dealing with anger situations.
- To review with the patient the work completed in the anger treatment phase sessions.
- To assess the patients' competencies in a large range of areas worked on during the anger treatment phase sessions.

Northgate & Prudhoe NHS Trust

CLINICIANS RATING SCALES (CRS)

Patient's Name: ..... D.o.b.:.....

Rater's Name: ..... Designation: .....

Date: .....

Length of time patient known to you (approximately) ..... year ..... months

For the above named patient, who has recently completed anger treatment, please rate him/her in comparison to how he/she was approximately 12 months ago.

1. **Tolerance for frustration**: is able to adjust to changes in routine; is flexible in how he thinks that things should be.

1	2	3	4	5
much worse	a little worse	about the same	a little better	much better

2. **Interpersonal sensitivity**: is aware of other people's needs and takes them into account before reacting.

1	2	3	4	5
much worse	a little worse	about the same	a little better	much better

3. **Sociability**: wants to involve himself in the company of others and is able to get along with others.

1	2	3	4	5
much worse	a little worse	about the same	a little better	much better

4. **Irritability**: is inclined to be touchy, to "fly-off-the-handle", is overly sensitive, or "thin-skinned".

1	2	3	4	5
much worse	a little worse	about the same	a little better	much better

5. **Tension:** is "wound-up", on edge, up-tight, and unable to relax.

1	2	3	4	5
much worse	a little worse	about the same	a little better	much better

6. **Defensive:** is inclined to perceive threat or malevolence and to react in a hostile manner.

1	2	3	4	5
much worse	a little worse	about the same	a little better	much better

PATIENTS' COMPETENCY CHECKLIST– PREPARATORY PHASE (PCC-PP)

Name: ..... **Date**: .....

The therapist, along with the patient's named nurse/keyworker, should consider the evidence (hard or clinical) to reach a judgement about the patients competence in each of the areas described below.

(The information in parentheses indicates if the area of competence relates to a specific preparatory phase session, or is general to this phase of treatment.)

		not competent	limited competence	competent
1.	**Understands how anger works – relationship between thoughts, feelings and behaviour (Session 1)**	☐	☐	☐
2.	**Understands the purpose of anger treatment (Session 1)**	☐	☐	☐
3.	**Aware of the functions of anger as a normal emotion (Session 2)**	☐	☐	☐
4.	**Understands the importance of self-monitoring of angry feelings (Session 2)**	☐	☐	☐
5.	**Aware of basic emotional states in others using a range of contextual cues (Session 3)**	☐	☐	☐
6.	**Understands the role cognitions play in the induction of emotions – specifically anger (Session 3)**	☐	☐	☐
7.	**Understands how stress affects thinking and behaviour (Session 4)**	☐	☐	☐
8.	**Aware of the physiological/physical reaction to stress (Session 4)**	☐	☐	☐
9.	**Is able to weigh the costs and benefits of anger and aggression (Session 5)**	☐	☐	☐
10.	**Is prepared to continue with anger treatment - PTQ (Session 5)**	☐	☐	☐

		Not competent	limited competence	competent
11.	**Ability to communicate appropriately in therapy context (General)**	☐	☐	☐
12.	**Ability to engage appropriately in therapy context (General)**	☐	☐	☐
13.	**Ability to comprehend the therapy process (General)**	☐	☐	☐
14.	**Demonstrates motivation and enthusiasm for therapy (General)**	☐	☐	☐
15.	**Ability to complete assigned homework tasks (General)**	☐	☐	☐
16.	**Ability to complete Anger Logs appropriately (General)**	☐	☐	☐
17.	**Ability to use basic relaxation strategies including controlled breathing, imagery and self-instruction (General)**	☐	☐	☐
18.	**Ability to liaise appropriately with nursing staff to facilitate anger treatment (General)**	☐	☐	☐

PATIENTS' COMPETENCY CHECKLIST– TREATMENT PHASE (PCC-TP)

Patients Name..... Date:.....

The therapist, if possible in collaboration with the patients named nurse/keyworker, should consider the evidence (hard or clinical) to reach a judgement about the patient's competence in each of the areas described below.

(The information in parentheses indicates if the area of competence relates to a specific treatment phase session, or is general to this phase of treatment.)

		Not competent 1	Limited competence 2	Competent 3
1)	Understand how anger works – relationship between thoughts, feelings and behaviour (Session 7)			
2)	Is able to understand the dimensions of their own anger problem – analysis and formulation (Sessions 7 and 8)			
3)	Understand the concept of 'thought-catching (Session 8)			
4)	Is able to construct meaningfully a useful anger hierarchy (Sessions 8 and 9)			
5)	Is able to understand the rationale for the use and practice of APR exercises (Session 8)			
6)	Understands the rationale for cognitive re-structuring (Session 10)			
7)	Is able to understand the concept of perspective-taking (Session 11)			
8)	Comprehends the notions of attentional focus, expectations and appraisals (Session 11)			
9)	Is able to generate useful self-instructions to cue anger control (Session 13)			
10)	Understands the importance of effective communication in problem-solving (Sessions 14 and 15)			

		Not competent 1	Limited competence 2	Competent 3
11)	Understands how rumination, escalation and repeated provocation can be threats to self-control (Sessions 16 and 17)			
12)	Is able to construct a realistic personal script for prompting anger control (Sessions 17 and 18)			
13)	Is aware of the sequential and integrated nature of anger control skills (Session 17)			
14)	Understands the importance of 'strategic withdrawal in some situations (Session 17)			
15)	Ability to use and benefit from APR exercises (General)			
16)	Ability to complete Anger Logs II appropriately (General)			
17)	Ability to complete Anger Logs III appropriately (General)			
18)	Ability to 'thought-catch' (General)			
19)	Ability to modify appraisals through perspective-taking (General)			
20)	Ability to use self-instructions (General)			
21)	Awareness of personal 'anger-sensitive' types of situations (General)			
23)	Ability to role-play successful anger coping skills (General)			
24)	Ability to communicate effectively in order to problem solve (General)			
25)	Ability to communicate appropriately in therapy context (General)			
26)	Ability to engage appropriately in therapy context (General)			

		Not competent 1	Limited competence 2	Competent 3
27)	Ability to comprehend therapy process (General)			
28)	Demonstrates motivation and enthusiasm for therapy (General)			
29)	Ability to complete assigned homework tasks (General)			
30)	Demonstrates regular use of APR and cassette tape (General)			
31)	Ability to liaise appropriately with nursing staff to facilitate anger treatment (General)			

32) How much help/support did the patient receive from staff on the ward with their anger treatment?

None 1	Limited/variable 2	About the right amount 3

33) Punctuality and availability for treatment sessions

Poor 1	Satisfactory 2	Good 3

34) Did the patient complete their anger treatment? **Yes/No**

35) Number of Anger Logs completed during Anger Treatment phase of treatment **N =**

36) Other comments on patient's competence

Signed:..... Date:.....

Designation:.....

PATIENTS' EVALUATION OF ANGER TREATMENT – PREPARATORY PHASE (PEAT-PP)

Name: ..... **Date:** .....

In the 6 preparation sessions we have tried to give you an idea of what anger treatment is all about.

1) Overall, was it worthwhile for you to attend the sessions?

None of the sessions	Some of the sessions	Yes, most of the sessions
1	2	3

2) Have you enjoyed the sessions?

No, not at all	Some of them	Yes, most of them
1	2	3

3) Have the sessions been helpful/useful to you?

No, not at all	A little	Yes, in lots of ways
1	2	3

4) Which bits (parts) of the sessions have been most useful, interesting or helpful?

i) .....

ii).....

iii).....

5) Which bits (parts) of the sessions have you disliked, found unhelpful or not useful?

i) .....

ii) .....

iii) .....

How helpful did you find the following bits?

	Unhelpful 1	A little helpful 2	Very helpful 3
6) **Finding out what anger treatment is all about**	☐	☐	☐
7) **Finding out how anger works (situations/thoughts/feelings/reactions/consequences)**	☐	☐	☐

	Unhelpful	A little helpful	Very helpful
	1	2	3
8) Learning that anger is normal and that everybody feels it sometimes	☐	☐	☐
9) Learning that our thoughts affect the way we feel and behave in angry situations	☐	☐	☐
10) Understanding the difference between happy, sad and angry feelings	☐	☐	☐
11) Finding out about how stress affects us ('Stress Thermometer' and physical reactions)	☐	☐	☐
12) Working out the costs (negative consequences) and benefits (advantages) of being angry and aggressive	☐	☐	☐
13) Talking about my feelings/problems	☐	☐	☐
14) Learning how to relax myself (self instruction/breathing control/relaxing images)	☐	☐	☐
15) Recording angry situations using the Anger logs	☐	☐	☐
16) Homework exercises	☐	☐	☐

17) Do you think you have changed since you started these sessions?

No, not at all	A little, for the better	Yes, a lot-for the better
1	2	3

Explain.....

.....

18) How could we improve these treatment sessions?

.....

.....

.....

19) Finally, is there anything that you feel that you are unsure about or would like to discuss?

Appendix 16

PATIENTS EVALUATION OF ANGER TREATMENT-TREATMENT PHASE (PEAT-TP)

Name:..... ..... Date:.....

You have now completed your anger treatment sessions, 6 preparation and 12 treatment proper sessions.

1. Overall, was it worthwhile for you to attend the sessions?

None of the sessions	Some of the sessions	Yes, most of the sessions
1	2	3

2. Have you enjoyed the sessions?

No, not at all	Some of them	Yes, most of them
1	2	3

3. Have the sessions been helpful/useful to you?

No, not all	A little	Yes, in lots of ways
1	2	3

4) Which bits (parts) of the sessions have been most useful, interesting or helpful?

i).....

ii).....

iii).....

5) Which bits (parts) of the sessions have you disliked, found unhelpful or not useful?

i).....

ii).....

iii).....

How helpful did you find the following bits?

		Unhelpful	A little helpful	Very helpful
		1	2	3
6)	Working out the kinds of situations that make you angry and how these affect you			
7)	Learning how to do relaxation exercises			

		Unhelpful 1	A little helpful 2	Very helpful 3
8)	Learning how to 'catch your thoughts' during anger incidents			
9)	Doing an anger hierarchy of situations in the past that have made you angry			
10)	Practicing coping well with anger situations (from your anger hierarchy) in your imagination while relaxed			
11)	Using a cassette tape to practice relaxation exercises			
12)	Learning to think differently (putting yourself in the other persons shoes) in anger situations			
13)	Understanding that you are 'sensitive' to certain kinds of anger situations that make you angry			
14)	Working out what you can tell yourself (self-instructions) to remind you how to stay calm and in control in angry situations			
15)	Role-playing (acting out) how to handle well and cope with angry situations			
16)	Learning how to sort out (problem-solve) in angry situations by being reasonable and talking to people in the right way			
17)	Understanding that dwelling on anger situations can make things worse			
18)	Learning how to deal with situations that are getting out of control (escalating) by backing-off or taking time-out			
19)	Having a personal reminder sheet to remind you of what to do in anger situations			
20)	Being able to talk about your problems/feelings			

		Unhelpful 1	A little helpful 2	Very helpful 3
21)	Recording your thoughts and feelings in your Anger Logs			
22)	Doing the homework exercises			
23)	Talking to and working with nursing staff on your anger treatment			

24) Do you think you have changed since you started your anger treatment?

No, not at all 1	A little, for the better 2	Yes, a lot for the better 3

Explain: _____

_____

_____

25) Are you a more or a less angry person now compared with when you started your anger treatment?

More angry 1	About the same 2	Less angry 3

26) How much help/support do you think you have had from staff on the ward with your anger treatment?

None 1	A bit 2	Just about the right amount 3

27) How could the anger treatment be made better for other patients in the future?

_____

_____

_____

28) Is there anything else that you are unsure about or would like to discuss?

_____

_____

_____

Northgate & Prudhoe NHS Trust

Anger Treatment Trial

INDEX OF CHANGE DURING TREATMENT (ICT)

Patients Name: ..... **d.o.b. .....**

Villa/Unit: ..... **Date: .....**

Nurses Name: ..... **Designation: .....**

Length of time patient known to you: ..... years ..... months

The above patient recently received anger treatment as part of a Controlled Trial of Anger Treatment between ..... and .....

	DEGREE OF CHANGE		
	None	**Minor**	**Major**
1. Changes to (psychotropic) medication Specify	☐	☐	☐
2. Change of accommodation Specify:	☐	☐	☐
3. Changes of named/keyworkers Specify:	☐	☐	☐
4. Change of RMO Specify:	☐	☐	☐

	DEGREE OF CHANGE		
	None	Minor	Major
5. Change of other staff/personnel Specify:	☐	☐	☐
6. Change of MHA section status Specify:	☐	☐	☐
7. Change in peer relationships Specify:	☐	☐	☐
8. Change in family relationships Specify:	☐	☐	☐
9. Change to work/occupation programme Specify:	☐	☐	☐
10. Changes to treatment plan Specify:	☐	☐	☐
11. Other changes Specify:	☐	☐	☐

CHANGE INDEX = ☐

Northgate & Prudhoe NHS Trust

Anger Treatment Trial

STAFF QUESTIONNAIRE (SQ)

Introduction

As you will be aware we have been running the Anger Treatment Programme (ATP) in the hospital during the past twelve months. We are now evaluating this programme and as a named nurse for patient(s) who has received anger treatment we would be grateful in having your views on the programme as part of this evaluation. Whilst we are asking you your name and designation in working through this part of the evaluation, your personal information will not be included in any report on the programme as we are mainly interested in seeing how the treatment has benefited patients as a whole. Thank you for your continued help and support with this work.

Interview Information

Coding

Interview conducted by:

Name: ..... Designation: .....

Date of Interview: .....

Staff Information

Name: ..... Designation: .....

Gender: M/F Number of years post qualification: .....

Clinical area (unit/villa): .....

Length of time worked in this clinical area: ..... years ..... months

Coding

Patient Information

Number of patients worked with who have received anger treatment (including those not named nurse for): ……..

Names of patients worked with who have received anger treatment (indicate with a * those named nurse for):

Anger Treatment Programme Information

1. On the whole would you say that the patients who have had anger treatment have benefited from it?

1	2	3	4	5
not at all	probably not	maybe	to some extent	a great deal

2. In what ways do you think patients have benefited from having anger treatment?

(i) ……

(ii) ……

(iii) ……

(iv) ……

3. In general terms would you say your experience and involvement in the ATP has been positive or negative?

1	2	3	4	5
very negative	negative	okay	positive	very positive

4. Do you think you have learned anything about anger treatment from your involvement with the project?

1	2	3	4	5
nothing at all	probably nothing	maybe something	to some extent	a great deal

Coding

5. What are the most important things you have learned about anger treatment from your involvement?

   (i) .....

   (ii) .....

   (iii) .....

6. Would you say that your involvement in the ATP has had an effect on the way you deal with other patients' anger and aggression problems?

1	2	3	4	5
not at all	probably not	maybe	to some extent	a great deal

7. In what ways has your involvement with the ATP had an effect on the way you deal with other patients' anger and aggression problems?

   (i) .....

   (ii) .....

   (iii) .....

   (iv) .....

8. Do you think other patients on the villa/unit have benefited from some patients receiving anger treatment and/or from your involvement?

1	2	3	4	5
not at all	probably not	maybe	to some extent	a great deal

9. In what ways do you think other patients have benefited from some patients receiving treatment and/or from your involvement?

   (i) .....

   (ii) .....

   (iii) .....

   (iv) .....

Coding

Based on your experience how could the anger treatment be improved to help patients with anger control problems in the future?

(i) .....
(ii) .....
(iii) .....

10. How could the anger treatment be improved to help ***you*** support anger treatment work with patients on your villa/unit?

(i) .....
(ii) .....
(iii) .....

11. Do you have any other thoughts, suggestions or comments about the anger treatment project?

(i) .....
(ii) .....
(iii) .....

Thank you for your help and support with developing this treatment programme and with this survey.

Appendix 19

Journal of Applied Research in Intellectual Disabilities 2002, **15**, 151–165

Cognitive–Behavioural Treatment of Anger Intensity among Offenders with Intellectual Disabilities

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Background **Aggressive behaviour has been identified as a significant problem amongst people with intellectual disabilities living in institutional settings. Anger is a key activator of aggressive behaviour, as well as being an important element of clinical distress related to adverse life experiences. There is some evidence for the value of cognitive–behavioural treatments for anger problems with people having intellectual disabilities. No controlled studies of anger treatment involving intellectually disabled offenders living in secure settings have been conducted to date. A pilot study of an elaborated anger treatment protocol for this client population was undertaken, comparing the specialised anger treatment with routine care.**
Methods **Detained men with intellectual disabilities and histories of offending were allocated to specially modified cognitive–behavioural anger treatment ($n = 9$) or to routine care waiting-list control ($n = 10$) conditions. Eighteen sessions of individual treatment were delivered over a period of 12 weeks. Treatment outcome was evaluated by participants' self-report of anger intensity to an inventory of provocations and by staff-ratings of the anger attributes of participants' ward behaviour.**
Results **Participants' reported anger intensity was significantly lower following the anger treatment, compared to the routine care wait-list condition. There were largely no treatment condition effects in staff-rated anger. Limited evidence for the effectiveness of anger treatment was provided by the staff ratings of participant behaviour post-treatment.**
Conclusions **Detained offenders with intellectual disabilities can benefit from intensive individual cognitive–behavioural anger treatment. Further research is required to examine the mechanisms for change and their sustainability.**

Introduction

Population surveys on several continents have found high rates of aggression amongst people with intellectual disabilities (Hill & Bruininks 1984; Sigafoos *et al.* 1994; Smith *et al.* 1996), with rates of aggression being commonly found to be much higher for those living in institutional settings than for those residing in community-based facilities. Novaco & Taylor (2002) found that almost half the male forensic population of a specialist forensic service for people with intellectual disabilities had been physically assaultive

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postadmission, and 34.1% carried out two or more assaults. Anger, as assessed by patient self-report and by staff ratings, was found to be significantly related to patient history of assaultive behaviour in the institution, which is convergent with results obtained by Novaco & Renwick (2002) in a prospective study at a high-security forensic hospital for mentally disordered offenders. Black *et al.* (1997) noted that psychological deficits in anger regulation are among the core elements of challenging behaviour in people with learning disabilities.

Anger is not a necessary precursor of aggression, nor is the experience of anger sufficient for the activation of aggression. Nevertheless, anger is an important activator of aggressive behaviour, particularly under conditions of high arousal intensity, that can serve to override inhibitory controls (Novaco 1994). Taking into account the consequences of such behaviour for patients themselves (e.g. stalled rehabilitation, diminished self-image and confidence, alienation, etc.) and for others around them, including direct care staff (e.g. physical and psychological injury, time off work, loss of confidence in their ability to work competently), anger and aggression are a heavy burden for the whole system concerned with the care and rehabilitation of incarcerated offenders with intellectually disablities.

Cognitive–behavioural treatments (CBT) for anger have been found to be effective with a range of client groups, including adult and adolescent in- and out-patients and nonclinical samples, particularly student volunteers. Meta-analysis reviews have been conducted by Beck & Fernandez (1998), Edmondson & Conger (1996), and Tafrate (1995). However, such reviews omit published case studies of anger treatment, which have successfully applied CBT for anger to troubled patients having complex clinical needs, including some with intellectual disabilities and forensic patients. A brief review of anger treatment studies with offender populations can be found in Novaco (1997).

Only a small number of controlled studies of anger treatments have been conducted that involved seriously disordered clinical populations including very angry Vietnam war veterans with severe post-traumatic stress disorder (Chemtob *et al.* 1997) and personality disordered forensic in-patients (Stermac 1986). Both studies obtained significant effects for CBT anger treatment compared to control group conditions.

Regarding cognitive–behavioural anger treatment for people with learning disabilities, Whitaker (2001) concludes that the experimental evidence is weak, compared with that for behavioural interventions (antecedent control and contingency management) in reducing aggression. However, behavioural approaches, unlike direct treatment, do not encourage self-regulation of behaviour. Once the intervention is withdrawn or the environment is altered so that the same contingencies no longer apply, the aggressive behaviour is likely to reappear. Murphy & Clare (1991), Black & Novaco (1993) and Lindsay *et al.* (1998) have reported case studies of CBT anger treatment with intellectual disabilities clients who were seriously aggressive in hospital and community settings. They achieved significant reductions in aggression that facilitated community resettlement and access to occupational opportunities. Non-controlled CBT group treatment studies with people with mild intellectual disabilities and anger control problems living in community settings by Rose (1996), and by King *et al.* (1999), have reported successful treatment outcomes in the short term.

There are only two anger treatment studies involving comparison groups with intellectual disabilities clients. Benson *et al.* (1986) used modifications of the Novaco treatment components in a group application across four conditions (self-instruction, relaxation training, problem-solving, and combined) with community-based clients.

They obtained significant effects on self- and staff-rated outcome measures and role-play ratings and found no significant differences between the groups (all conditions involved active treatments). Likewise, Rose *et al.* (2000) evaluated a group intervention for clients registered with community-based services. The treatment was similar to the Rose (1996) study, which used a modified Novaco approach, but added more individualised procedures from that approach. A direct carer accompanied each participant to all group sessions to encourage collaborative working and to facilitate transfer of skills to every day settings. Self-reported expressed anger and depression scores were reduced significantly in conjunction with treatment and were maintained at 12-months follow-up, but the measures and design were not robust.

It has been suggested that cognitive components of anger treatments have limited efficacy with clients having intellectual disabilities, because of difficulties in comprehension, assimilation, and recall. Non-cognitive components, such as relaxation, self-monitoring and skills training through role-play, are seen to have greater benefit (Rose 1996; Rose *et al.* 2000; Whitaker 2001). However, scrutiny of studies that purport to have incorporated cognitive techniques indicates that they have mainly used skills training procedures, such as self-instruction and interpersonal problem-solving, to ameliorate cognitive process deficits, rather than to identify and modify cognitive content (anger-engendering thoughts and schemas) associated with anger control problems. Thus far, cognitive-restructuring procedures have not been included substantively in treatment packages for people with intellectual disabilities. Two possible reasons for this omission are the presumption of difficulty and insufficient effort at procedural adaptation.

It is premature to disregard cognitive re-structuring techniques for anger control with this client group when such procedures have not been implemented concertedly. Indeed, the scope of the anger intervention varies substantially across studies, a great many of which assert grounding in the CBT approach developed by Novaco (1975), which utilises the stress inoculation paradigm (Meichenbaum 1985). Recently Novaco *et al.* (2000) distinguished between several levels of psychological intervention for anger problems, principally 'general clinical care for anger', 'anger management', and 'anger treatment'. Anger management provision is seen as a psycho-educational approach guided by cognitive–behavioural principles, structured by a syllabus, and typically delivered in a group format. 'Anger management' is less intensive than anger treatment, it is not driven by analysis and formulation of an individual's anger problems and treatment needs, it typically does not involve evocation of distressed emotion, and it does not implement the graded hierarchical exposure to provocation that is a core component of the stress inoculation model. Most of the studies carried out to date with people with intellectual disabilities and anger problems would fit into that category. In contrast, 'anger treatment' aims to modify cognitive structures to minimise anger, to enhance self-monitoring capacity, and to build self-regulatory coping skills through therapeutically guided exposure to provocation. It requires individual delivery by trained and supervised therapists to promote a therapeutic relationship that can overcome the client resistance and fear of change that is characteristic of high anger people whose difficulties are typically deep-rooted.

The present study is a pilot evaluation of an anger treatment protocol (Taylor & Novaco 1999) designed specifically for use in a specialist in-patient forensic service for people with intellectual disabilities. Cognitive re-structuring is a central therapeutic feature, as is arousal reduction and behavioural skills training. Reductions in patient- and staff-rated anger intensity were hypothesised. All participants were involuntary

in-patients with clinically significant anger problems who experienced difficulties in engaging in and maintaining therapeutic relationships. An individualised approach to treatment was required to increase and sustain patients' motivation for change.

Method

Setting

The study was conducted in a hospital that is part of the largest specialist intellectual disability NHS Trust in England. The hospital is a local, regional and national centre for in-patient forensic services for this client group. Referrals are made to this service from a range of agencies including health authorities, the Courts and prisons. The forensic service comprises eight units providing medium secure, low secure, and rehabilitation facilities for around 160 patients. Eight–six per cent of the forensic in-patient population are men. All of the units are single sex.

Participants

The participants were 20 adult male in-patients who met the following inclusion criteria: (a) between 18 and 60 years of age; (b) full scale IQ between 55 and 80; (c) detained under sections of the England & Wales Mental Health Act 1983; and (d) anger self-report total score >55 on the Provocation Inventory (PI; Novaco 1994). In addition, on the basis of a semistructured interview, the participant had acknowledged having a problem with controlling their temper, either currently or in the past, that could adversely affect their future rehabilitation. Each participant's medical officer also supported project inclusion, having judged that the treatment would contribute significantly toward meeting identified clinical needs. Exclusion criteria were as follows: (a) presence of an active (uncontrolled) Axis I mental disorder – DSM-IV (American Psychiatric Association 1994); (b) presence of epilepsy that was judged to be intrinsic to the patient's anger/aggression; and (c) plans for discharge or transfer during the 6-month period from the beginning of treatment. There were no refusals to participate.

Given the study population (detained patients with intellectual disabilities) and the experimental framework for the study, it was vital to obtain informed consent in a careful manner. A cautious and conservative approach was adopted, involving two stage of consent giving. Firstly, participants were interviewed by the therapist and the nurse who functioned as the patient's key ward staff member. Written information was provided to participants about the research, the treatment, confidentiality issues, and their rights to decline involvement without prejudice to their future care in the hospital. Each of these areas was discussed with the participant. They were told that if they consented to take part in the six-session preparatory phase, they would then be asked if they wanted to continue or to opt out before the treatment phase began. The participant's nurse then arranged to speak with him again within 36 h to answer any questions and to seek written consent. Written consent was again sought after completion of the preparatory phase, at that time the patient was quite well informed about the project. Of the 20 participants involved in the study, one did not complete treatment for reasons unrelated to the treatment and is not included in the analysis.

The study sample had a mean age of 29.2 years (SD = 7.2) and had been in hospital for a mean of 4.6 years (SD = 3.8). On average they were functioning towards the top of the

mild intellectual disability range (mean full scale IQ = 67.9, SD = 5.2) and had a mean reading age of 7.7 years (SD = 2.1). Table 1 provides demographic, intellectual functioning and offence history data for the 19 participants, partitioned by treatment condition. The anger treatment (AT) and routine care (RC) control groups do not differ significantly on any of these key variables. With regard to these characteristics, this sample is representative of the male in-patient population of intellectually disabled offenders from which it is drawn (Novaco & Taylor 2002).

This treatment sample's pretreatment PI score ($M = 69.5$, SD = 12.7) is higher than the mean of 62.9 obtained for the whole population in the hospital (Novaco & Taylor 2002), which is comparable to patients without intellectual disabilities in other forensic and psychiatric populations in the UK and US (Novaco 1994; O'Neill 1995). This indicates that this sample experienced significant levels of anger intensity across a range of provocative situations. Following admission just over 50% of the sample had been physically assaultive towards either staff or other patients, and 8 of these 10 participants had carried out physical assaults on more than two occasions postadmission.

All study participants were detained by the Courts to a low or medium secure hospital. In terms of the level of security at the time of treatment, the participants were distributed throughout the hospital forensic service. Data on type of commitment, previous convictions, and security level are given in Table 1. Twelve of the 19 participants in this sample (63%) also had convictions for a range of other offences (e.g. burglary, car theft,

Table 1 Patient characteristics for treatment groups

	Anger treatment (n = 9)	*Routine care (n = 10)*
Mean age (and SD)	29.0 (5.5)	29.3 (8.8)
Mean IQ[1] (and SD)	69.3 (3.7)	66.7 (5.2)
Mean reading age (and SD)	8.2 (2.7)	7.2 (1.5)
Mean length of stay in hospital (and SD)	4.9 (3.6)	4.4 (4.1)
Mental Health Act 1983		
treatment section (s.3)	2	3
hospital order (s.37)	4	3
hospital order with restriction (s.37/41)	3	4
Ward security level		
medium security	1	3
acute low security	2	1
rehabilitation	6	6
Previous convictions		
for violence	3	4
for sexual offences	4	4
for fire-setting	2	1
for other offences	7	5
Assaults since admission	5	5
Mean pretreatment Provocation Inventory (and SD)	65.6 (15.1)	73.1 (9.4)

[1]Assessed using the Wechsler Adult Intelligence Scale – Revised UK version (WAIS-R UK).

fraud, breach of the peace). Only three participants did not have any criminal convictions recorded, but in each case there had been documented concerns regarding violent behaviour, sexual aggression, or both. In addition to intellectual disability, 12 out of 19 participants (63%) had comorbidity on other clinical diagnoses including affective, personality, and psychotic disorders. These dual diagnoses were distributed evenly between the AT and RC groups.

Research design

A delayed waiting-list control design was used in this study since it was considered unethical to withhold a previously validated treatment from those identified as having a need for it. Treatment effectiveness was evaluated by comparing the post-treatment outcome scores for the treatment group with pretreatment scores of the control group. Participants who met the inclusion criteria were allocated randomly to the AT or RC condition. Groups were then balanced to ensure equivalence on age, intellectual functioning, length of stay and pretreatment PI scores due to the small numbers involved. All participants continued to receive treatment as usual, such as psychotropic medication, nurse-led counselling, behavioural management techniques, and psychological treatments including offence-related group therapy. The RCT standard of 'blind' assessment could not be achieved in this study. In an attempt to attenuate this problem, patient assessments were conducted by research assistant psychologists rather than by the therapists themselves and assessors did not, as a rule, evaluate patients with whom they had ongoing clinical relationships or detailed knowledge. In the context of a dynamic clinical setting, these arrangements were a best effort to balance internal and external threats to validity.

Treatment

The treatment was provided by three therapists (J.T., B.G. & I.T.), who were all highly experienced clinical and forensic psychologists. To ensure the integrity of the treatment protocol, the therapists met weekly for peer supervision sessions. During these sessions, the delivery of the protocol and any deviation from it was discussed, agreed and noted. The author of the original protocol (R.N.) made regular on-site visits to provide training, supervision, and support to the therapists and to monitor the procedural progress of the treatment project.

The treatment was guided by a new manual, designed specifically for use with people with mild to moderate intellectual disabilities (Taylor & Novaco 1999). This new treatment was based on the cognitive–behavioural approach developed by Novaco (1975, 1993). Treatment was delivered to individual participants by the same therapist over 18 sessions. An 18-session treatment package was decided upon for a number of reasons. This approximated the average amount of therapy delivered to participants in the published anger treatment studies involving people with developmental disability. Eighteen 1-h sessions appeared to be about the right amount of time required to deliver the revised and modified content of Novaco's (1993) most recent anger treatment manual. Also, this amount of therapy had worked well and had been positively received in a small number of clinical case studies.

Treatment sessions occurred twice weekly, whenever possible, with a minimum of one session per week. Previous psychotherapeutic experience with this patient group

suggested that a more intensive treatment schedule would help to overcome fluctuations in individuals' motivation to change by maintaining therapeutic momentum and preventing drift. In addition, it was estimated that a higher therapeutic dosage would ameliorate some of the anticipated difficulties with assimilation and recall of information exchanged during the treatment sessions. The patient's nurse key worker or deputy was involved regularly at the end of sessions to discuss progress and homework to be completed between sessions.

The personal histories of many of the participants involved physical, emotional and sexual abuse, as well as repeated failures across health and social care settings, resulting in perceived rejection by important others and loss of close relationships. Thus, engagement in trusting therapeutic relationships is difficult for them. For these reasons, a broadly psycho-educational 'preparatory phase' of anger treatment was offered, consistent with the cognitive preparation elements of the stress inoculation approach (cf. Meichenbaum 1985). The acute need for this component of CBT for anger in treating seriously disordered clients was advocated by Novaco and was then implemented by Renwick *et al.* (1997) with forensic patients. The value of anger treatment preparatory work with intellectual disabilities clients was discussed by Black *et al.* (1997).

The present study used a newly formulated, manual-based preparatory phase, comprised of six sessions, centrally aimed at desensitising participants to anxieties about embarking on intensive psychological therapy and building rapport with the therapist. The goals of this phase of treatment were: (a) to give the patient information on the nature and purpose of anger treatment; (b) to encourage motivation to change current anger responding by identifying the costs of this behaviour; (c) to develop some basic skills needed for successful treatment, including self-disclosure, emotional awareness, self-monitoring and recording, and basic relaxation techniques; (d) to foster trust and confidence in the therapist and the therapeutic process; and (e) to emphasise the collaborative nature of the treatment, stressing its self-control themes.

On successful completion of the preparatory phase, participants proceeded to the 12-session 'treatment phase', the core components of which are cognitive re-structuring, arousal reduction, and behavioural skills training. These map onto the key domains of the cognitive model of anger proposed by Novaco (1994) and are achieved by building on the relationship and skills developed during the preparatory phase. The techniques and procedures utilised in the treatment phase include: (a) more advanced self-monitoring and recording of anger frequency, intensity, duration and triggers; (b) a detailed analysis and formulation of the individual's anger problems; (c) construction of a personal anger provocation hierarchy from anger log records and recollection of earlier angry situations; (d) cognitive re-structuring by shifting attentional focus, modifying appraisals and challenging expectations; (e) developing arousal reduction techniques including abbreviated progressive muscular relaxation, breathing-focused relaxation and cognitive distraction using calming imagery; (f) training problem-solving approaches through effective communication using role-play rehearsal and (g) use of the stress inoculation approach to practice effective coping whilst visualising and role-playing increasingly anger-provoking scenes from the anger hierarchies.

The manualised procedure is intended to provide a replicable framework for the therapeutic techniques with flexibility to meet the needs of individual participants. The treatment by nature is collaborative and interactive, and it is applied in a manner that reflects these dynamics. There will be variations in the focus, pace, and emphasis of the

therapy delivered by different therapists working with different participants, varying with the analysis and formulation of their anger problems.

Outcome measures

Treatment effects were evaluated using two instruments: (1) the Provocation Inventory (PI), and (2) the Ward Anger Rating Scale (WARS). The PI is an anger reaction inventory consisting of 25 items providing an index of anger intensity and generality across a range of potentially provocative situations. It is a shortened version of the Novaco Provocation Inventory (Novaco 1975, 1988) and was first implemented as NAS Part B, but is now a separate instrument. The PI has been shown to have high internal and test–retest reliability and has been validated in studies involving psychiatric and offender populations (Novaco 1988; Mills *et al.* 1998). Modified for intellectually disabled offenders, the PI was found by Novaco & Taylor (2002) to have high internal reliability and significant concurrent validity.

The PI has five subscales (disrespectful treatment, unfairness/injustice, frustration/interruption, annoying traits and irritations) and responses are made on a four-point scale ranging from 1 (not at all angry) to 4 (very angry). The modified version of the PI used in this study and in Novaco & Taylor (2002) is altered for administration as a structured interview, rather than as a self-completed pencil and paper test. As well, the meaning of some items is sharpened for people with intellectual disabilities, and the salience of content pertinent to living in highly supervised forensic environments is increased. For example item 17, 'Being singled out for correction, when someone else doing the same thing is ignored' was changed to 'Everyone in your ward/unit does something silly, but you are the only person who is told off'.

The WARS is a two-part scale completed by a ward staff member who knows the patient well, recording judgements concerning the patient's behaviour over the past week. It was designed by Novaco (1994) for simplicity and ease of recording by busy direct-care staff. Part B of the instrument involves ratings on five-point scales from 0 (not at all) to 4 (very often) regarding seven affective-behavioural attributes semantically related to anger (angry/annoyed, irritable/grouchy, resistant to suggestions, impatient/frustrated, tense/uptight). The sum of the seven WARS Part B anger attribute ratings produce an Anger Index. In a study involving mentally disordered offenders in a high-security hospital in Scotland, the WARS Anger Index had high internal consistency and significant concurrent and predictive validity (Novaco & Renwick 2002). In their study with detained intellectually disabled offenders, Novaco & Taylor (2002) found the WARS Anger Index to have high internal reliability and significant stability across administrations on two separate occasions. Concurrent and retrospective validity were obtained for this index in relation anger self-report measures, and with violent offence history and assaultive behaviour records in hospital.

In addition to these psychometric measures, participants in the AT group were assessed by a nurse key worker at the end of treatment and then again after 1 month, using a Clinicians Rating Scale (CRS). This is a modification by Renwick *et al.* (1997) of a measure developed by Black (1994) to assess characteristics of social behaviour salient to anger coping skills. The CRS is made up of six attribute scales: 'tolerance for frustration', 'interpersonal sensitivity', 'sociability', 'irritability', 'tenseness', and 'defensiveness'. These attributes are rated on five-point scales from 1 (much worse) to 5 (much better) regarding changes over the past 12 months.

Results

Anger intensity

There was no significant difference between the mean PI scores between the AT and RC conditions before treatment. The PI outcome data are presented in Figure 1. Following treatment, there was a decrease in the PI mean for the AT group ($n = 9$) from 65.6 (SD = 15.1) to 50.8 (SD = 13.0) following intervention, that is statistically significant, t (8) = 2.72, $P < 0.05$, indicating a reduction in self-rated anger intensity in the treatment condition. During the same period of time, the PI score for the RC control group ($n = 10$) increased significantly from 73.1 (SD = 9.5) to 79.2 (SD = 13.0), t (9) = 2.65, $P < 0.05$. A mixed design repeated measures ANOVA, with pre- and post-treatment PI scores as the dependent variable, time of assessment a within-subjects factor and treatment condition (AT vs. RC) as the between-subjects factor, produced a significant treatment condition × time interaction effect, F (1,17) = 13.56, $P < 0.005$. This suggests that the post-treatment reduction in levels of anger intensity reported by the AT group is a result of the intervention.

The means for the subscales of the PI are given in Table 2. For all five subscales, the means for the AT condition decrease from pre- to post-treatment, whereas for the RC condition, the means increase on all but one subscale. Examination of these subscales means shows that, for both groups, unfair or unjust situations evoke the most intense anger. In the AT condition, the greatest reduction following treatment was for these unfairness/injustice provocations, and this was significant, t (8) = 3.05, $P < 0.05$). There was a small nonsignificant fall on this subscale in the RC condition.

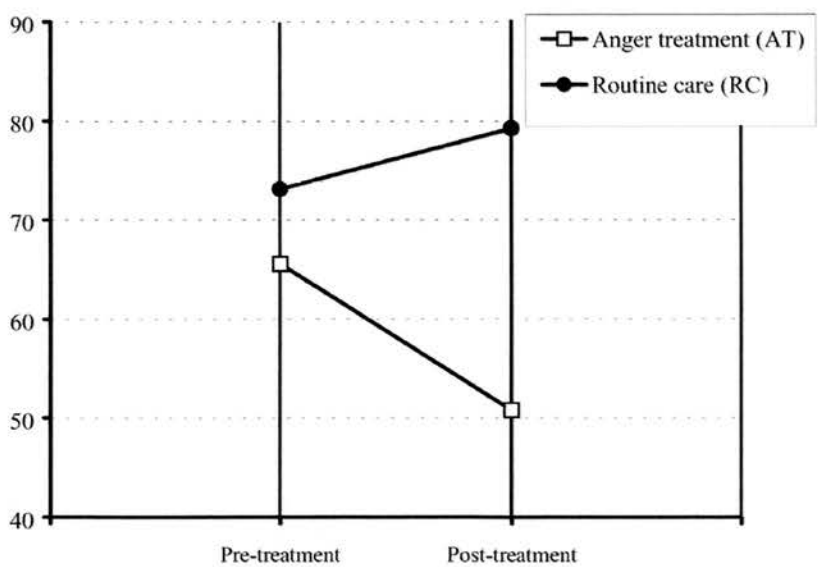

Figure 1 Mean Provocation Inventory (PI) scores over time.

Table 2 Means for Provocation Inventory sub-scale scores

	Pre-treatment		*Post-treatment*	
PI sub-scale	*AT group (n = 9)*	*RC group (n = 10)*	*AT group (n = 9)*	*RC group (n = 10)*
Disrespectful treatment	12.66 (3.24)	16.20 (2.78)	11.00 (2.06)	17.30 (3.26)
Unfairness/injustice	16.11 (3.01)	17.40 (2.12)	11.44 (3.16)	16.90 (1.79)
Frustration/interruption	12.33 (4.09)	14.10 (3.34)	9.89 (3.41)	14.60 (3.50)
Annoying traits	12.55 (4.30)	12.40 (3.27)	9.55 (4.82)	15.10 (3.81)
Irritations	11.88 (4.59)	13.00 (2.26)	8.89 (3.02)	15.30 (3.16)

Note. Standard deviations are given in parentheses.

Anger attributes

Analysis of the WARS Anger Index is based on 17 participants (AT group $n = 8$, RC group $n = 9$), as one patient who completed treatment was discharged before a post-treatment WARS measure could be completed for him, and a patient from the control group also dropped out at this point.

The pre- and post-treatment means for the WARS Anger Index are presented in Figure 2. The mixed design repeated measures ANOVA was not significant. The anger

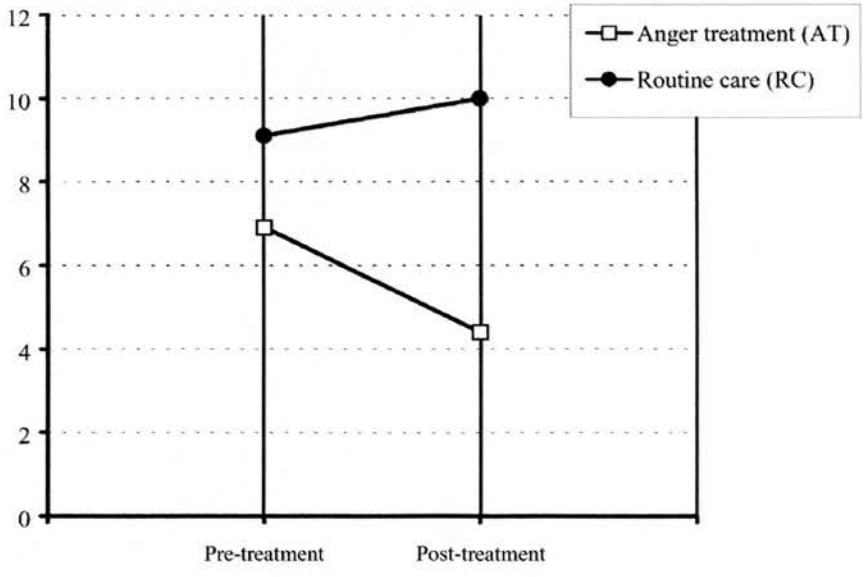

Figure 2 Mean WARS Anger Index Scores over time.

Table 3 Means for WARS Anger Index Attributes for the AT group ($n = 8$)

Attribute	*Pre-treatment*	*Post-treatment*
Angry or annoyed	1.00 (0.93)	0.75 (0.71)
Irritable or grouchy	1.12 (1.25)	0.75 (0.71)
Resistant to suggestions or requests	0.75 (0.71)	0.37 (0.52)
Impatient or frustrated	1.12 (1.13)	0.87 (0.99)
Tense or uptight	1.00 (0.87)	0.87 (0.99)
Agitated or restless	0.87 (1.13)	1.00 (0.76)
Bitter or resentful	1.00 (1.19)	0.25 (0.71)

Note. Each anger attribute is rated by direct care staff on a five-point scale concerning participants' behaviour during the previous seven days where 0 = 'not at all' and 4 = 'very often'. Standard deviations are given in parentheses.

ratings for participants in the AT condition decreased following treatment, from 6.9 (SD = 6.5) to 4.4 (SD = 3.4). This change in staff-reported anger characteristics of AT participants during the previous week is not statistically significant. During the same period, the mean for the RC group increased slightly. Table 3 contains the means for the seven attributes comprising the WARS Anger Index for the AT condition. All ratings except that for 'agitated or restless' were lower following treatment, and the changes for 'impatient or frustrated' and 'bitter or resentful' are significant, $t\ (7) = 2.39$, $P < 0.05$ for each.

Table 4 Mean Clinicians' Ratings of AT group improvement on anger dimensions post-treatment and at 1-month follow-up

	Clinicians' ratings of improvement	
Anger dimension	*Post-treatment* ($n = 9$)	*1-month follow-up* ($n = 8$)
Tolerance for frustration	3.3 (0.5)	4.0 (0.5)
Interpersonal sensitivity	3.3 (0.5)	3.6 (0.5)
Sociability	3.3 (0.5)	3.5 (0.8)
Irritability	3.4 (0.5)	3.4 (0.5)
Tenseness	3.8 (0.7)	3.5 (0.5)
Defensiveness	3.6 (0.5)	3.9 (0.6)

Note. The values above are means with standard deviations given in parentheses for ratings pertaining to change. The rating scale was: *'much worse'* = 1, *'a little worse'* = 2, *'about the same'* = 3, *'a little better'* = 4 and *'much better'* = 5. Standard deviations are given in parentheses.

Clinicians Ratings Scales

The results of the CRS ratings for the AT participants, provided by nurse key workers following completion of treatment and at 1-month follow-up, are given in Table 4. Rating values above 3 indicate improvements in social behaviours relevant to anger coping skills. The means for the post-treatment ratings indicate modest improvement on all of the anger dimensions, and this is maintained at 1-month follow-up. None of the participants were rated as becoming worse on any of the dimensions at either time point. Overall, these CRS ratings provide convergent evidence for treatment gains for the AT participants, as their behaviour was evaluated by direct care staff.

Discussion

The results of this pilot study are encouraging. It was hypothesised that the provision of treatment would lower the intensity of participants' anger reactions, as indexed by their self-report ratings on an inventory of provoking situations and by staff-ratings of the anger attributes of their behaviour on the ward. Participants who received a specialised anger treatment improved significantly on self-reported anger intensity, compared with waiting-list controls in routine care, whose scores worsened significantly during the same period. The outcomes on staff-rated anger attributes were mixed. Anger treatment participants showed indication of treatment gains on some rated attributes, but the overall differences between treatment conditions were not statistically significant. Direct care staff did rate participants who had received anger treatment as having improved slightly on various social behaviours pertinent to anger control, comparable to the degree of improvement reported by Renwick *et al.* (1997).

The largely nonsignificant results on the staff-rated anger attributes measure is puzzling, but it may have been due to there being a floor effect on this variable. The pretreatment means for the study sample on each of the seven items making up the WARS Anger Index were between 0.79 and 1.26 on 0–4 ratings scales. Therefore, low levels of angry behaviour were reported by the staff for the 7-day period prior to treatment. It may be that this was too short a period for the baseline observation, but it may also be a result associated with the participants living in a secure setting having high levels of structure and supervision by staff skilled in the management of disturbed patients. It had been found by Benson & Ivins (1992) that care providers rate people with intellectual disabilities as being more angry than the individuals rate themselves, but there was no evidence of this in the anger attribute ratings.

A different form of staff assessment, the Clinician's Rating Scale, administered only in the anger treatment condition, did point to some improvement in social behaviour associated with anger control coping skills. Following practice *in vivo*, one might expect these behavioural ratings to improve over time, and there is some indication in the 1-month follow-up data to support this speculation. Despite the low magnitude of the staff-rated treatment effects, as evidenced by the CRS and the WARS, the ratings are in the hypothesised direction, and they converge with participants' self-reporting.

Several methodological issues remain. Firstly, the small sample size may have introduced biases that could have contributed to the obtained significant effects. On the other hand, the means for the dependent measures were consistently in the direction hypothesised, and small sample sizes reduced the statistical power available. Secondly, in addition to the low levels of staff-observed anger, there were low rates of overt aggression

during the 7-day pretreatment period. Even verbal aggression was low, as only 2 of 19 participants exhibited verbal abuse or threats during this interval. The same rate occurred for verbal abuse in the 7-day interval post-treatment, and there was one physical assault. Most generally, aggression is a low base-rate behaviour, although often highly consequential when it occurs. Assaults by hospital patients do not happen very often, but they are not trivial matters when they do. Because the relevance of anger dyscontrol is to a large extent a function of its link to aggressive behaviour, a much longer observational period post-treatment will be needed in future study design, perhaps also including the transition to community settings. Finally, it was not possible for participants to be evaluated blind to their treatment condition and this could have introduced bias into the obtained results. Ideally, future research would involve a larger study sample, and incorporate blind assessment on outcome measures and long-term follow-up to evaluate the durability of treatment gains and their transferability across residential contexts.

Another methodological issue concerns the efficacy of treatment components, that we did not seek to evaluate separately. The efficacy of the cognitive components of the anger treatment for persons with intellectual disabilities remains an important question. The treatment intervention is based on a model of anger having cognitive mediation as one of its core principles. Central to the treatment process is the identification, challenging, and replacement of over-learned, rigid, and hostile cognitive schemas and thinking styles. The role of cognitions and cognitive processes in anger, and the training of cognitive re-structuring techniques to alter unhelpful cognitions associated with anger problems is infused in to this treatment approach and has equal status with and is given the same amount of attention and time as arousal reduction and behavioural skills training procedures. To what extent the cognitive re-structuring features of the treatment took hold and contributed to the observed gains merits examination that we cannot provide in the present study design but would aim to do so in future research. We also do not know the degree to which other interventions received by the participants contributed to the outcomes, and we would seek to ascertain a detailed assessment of the elements of the routine care provision in subsequent studies.

These early findings demonstrate that patients with intellectual disabilities having long-standing anger problems and few psychological resources can benefit from a structured approach to anger treatment. Despite having traumatic life histories and repeated experiences of rejection and failure, these participants formed and maintained a therapeutic relationship. The preparatory phase of treatment highlighted the normality of anger but sensitively introduced the personal costs issues associated with recurrent anger reactions. This enabled participants to gradually engage in the therapy process without threat. Even those participants who were initially most wary or suspicious chose to continue beyond the preparatory phase, despite being given the opportunity to opt-out. Despite its more emotionally demanding qualities, the anger treatment phase did not induce any marked degree of anxiety or distress. Treatment sessions progressed as planned, with little additional work required in supplementary session outside of the protocol. Even the one patient who dropped-out reported that the treatment was positive and helpful. Despite these clinical impressions is not possible within the current study to be certain how much impact the preparatory phase of treatment had on treatment outcomes. This issue requires further systematic enquiry.

Our study participants, like a great many others in such custodial settings, are typically quite rooted in the here and now, avoid reflection on their emotionally painful and shame-inducing pasts, and have great difficulty conceptualising and planning the

future. Despite these characteristics, they were able to benefit from an intensive therapy that explores negative biographical and day-to-day experiences in order to prepare for future challenges. This was achieved within an institutional context that focuses on the present and gives little consideration to the individual's past or their long-term future (Heyman *et al.* 2002). Given the complexity of this clinical work, requiring both therapeutic and organisational skills to deliver it, it is questionable whether it could be successfully implemented by less experienced clinicians or without close supervision and this should be tested out in future studies.

In summary, this pilot study has demonstrated that people with intellectual disabilities and histories of offending or quasi-offending can benefit from a modified cognitive–behavioural anger treatment. Conducted in a specialist forensic setting and enlisting the involvement of direct care staff, the treatment results indicate significant reductions in patient-rated intensity of anger reactions, with some support being found in staff-ratings. Further research is required to understand the mechanisms for change, the levels of clinical training and expertise required to deliver the treatment successfully and if treatment gains can be sustained and transferred to new settings.

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